

HERBERT HOOVER DIKE MAJOR REHABILITATION GLADES, HENDRY AND PALM BEACH COUNTIES

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT



MODIFIED DESIGN IN REACH 1 AND PRIORITY TOE DITCH REPAIRS IN REACHES 1, 2 AND 3

**ENVIRONMENTAL ASSESSMENT
REACH ONE HERBERT HOOVER DIKE
MODIFICATIONS TO MAJOR REHABILITATION: TOE DITCH REPAIRS
GLADES, HENDRY AND PALM BEACH COUNTIES, FLORIDA**

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Appendix B – CZMP Evaluation

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LIST OF ACRONYMS

bls	Below Land Surface
BMPs	Best Management Practices
CFR	Code of Federal Regulations
CAR	Coordination Act Report
C&SF	Central and Southern Florida Project
Corps	US Army Corps of Engineers
dB	Decibels
DDR	Draft Design Report
DEIS	Draft Environmental Impact Statement
EAA	Everglades Agricultural Area
EIS	Environmental Impact Statement
EPA	US Environmental Protection Agency
FEIS	Final Environmental Impact Statement
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FFWCC	Florida Fish and Wildlife Conservation Commission
FGFWFC	Florida Game and Freshwater Fish Commission
FMSF	Florida Master Site File
FNAI	Florida Natural Areas Inventory
FNST	Florida National Scenic Trail
GLOTA	Greater Lake Okeechobee Tourist Alliance
HHD	Herbert Hoover Dike
HGS	Hurricane Gate Structure
LOST	Lake Okeechobee Scenic Trail
MRR	Major Rehabilitation Report
MWL	Minimum Water Levee
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act of 1966, as amended
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
PSD	Prevention of Significant Deterioration

SDEIS	Supplemental Environmental Impact Statement
SFWMD	South Florida Water Management District
SHPO	State Historic Preservation Officer
USFWS	United States Fish and Wildlife Service
VE	Value Engineering
WCA	Water Conservation Area

**FINDING OF NO SIGNIFICANT IMPACT
HERBERT HOOVER DIKE REACH ONE
HENDRY, GLADES, AND PALM BEACH COUNTIES, FLORIDA**

The attached Environmental Assessment (EA) proposes structural rehabilitation measures for Reach 1 and two priority areas in Reaches 2 and 3 of the Herbert Hoover Dike, in Palm Beach and Hendry Counties, Florida. The recommended alternative is to fill the existing toe ditch and then place a seepage control berm above it on the landside of the levee, extending from the levee toe to the outer limit of the current right-of-way. The proposed plan is illustrated on page 12 of the EA, and it will be implemented as shown on EA Figure 2-7.


Based on the information analyzed in this Environmental Assessment (EA), reflecting pertinent information obtained from agencies having jurisdiction by law and/or special expertise, I conclude that the proposed action will not significantly impact the quality of the human environment and does not require an Environmental Impact Statement (EIS). Reasons for this conclusion are, in summary:

- a. The goal of the rehabilitation of the HHD is to reduce the risk to public safety and health associated with the stability of the dike by implementing the recommended plan. Levee seepage and stability have a direct effect on the capability of the levee to provide authorized protection. The authorization for levee repairs and modifications of The Flood Control Act of 1948 justify the proposed renovation to the HHD.
- b. This EA has been circulated with a draft proposed Finding of No Significant Impact (FONSI) for public and agency review and coordination in compliance with the National Environmental Policy Act. No significant issues were raised regarding project impacts to the natural or human environment.
- c. Impacts to the toe ditch wetlands will be moderate. Although the quality of the wetlands in these man-made ditches is not considered high, a variety of wading birds, small fishes and invertebrates utilize the ditches. In the Final EIS for Reach 1 repairs (July 2005), the U.S. Fish and Wildlife Service (USFWS) suggested mitigation measures in the Coordination Act Report (CAR). As a result, the Corps carried out mitigation that is equivalent to 17.10 habitat units of mitigation credit (p. 39).
- d. Adverse impacts to protected species are not anticipated. There is no critical habitat for listed endangered species along the landward toe of HHD. Listed species that might be observed in the region include wood stork (E), snail kite (E; critical habitat inside HHD in Lake Okeechobee littoral zone), eastern indigo snake (T), bald eagle (T), and Audubon's crested caracara (T). Special measures will be incorporated during project construction to avoid or minimize adverse effects to any listed endangered, threatened, or species of special concern that may be present (see Environmental Commitments, p.37). The U.S. Army Corps of Engineers (USACE) and the South Florida Water Management District (SFWMD) agree to maintain an open and cooperative informal consultation process with the U.S. Fish and Wildlife

Service and Florida Fish and Wildlife Conservation Commission throughout the design, construction, and operation of this rehabilitation project. The proposed action is in compliance with the Endangered Species Act.

- e. Minor impacts to fish and wildlife are likely to occur due to implementation of the preferred alternative. The foraging habitat for wading birds in the landward toe ditches would be reduced through implementation of this alternative. This is a minor loss, but considering the low quality of these ditches as foraging habitat, and the availability of an extensive network of comparable ditches in the area, not significant in extent.
- f. The proposed action would occur within the existing Right-of-Way. The Final EIS (July 2005) approved implementation of the selected plan within this area.
- g. The USACE has coordinated a consistency determination under the guideline of the Coastal Zone Management (CZM) Act in the Final EIS, dated July 2005. The State has concurred with the determination (Annex D of the Final EIS, dated July 2005) that the proposed action is consistent with the State's CZM programs. We expect that the modified plan is likewise consistent with the Florida CZM program.
- h. The proposed action has been coordinated with the Florida State Historic Preservation Officer in accordance with the National Historic Preservation Act and the Archeology and Historic Preservation Act. Consultation with the State Historic Preservation Officer (SHPO) was initiated August 20, 1999. In a response dated April 7, 2005, the SHPO concurred with the Corps' no adverse effect determination on Reach 1. The project will not affect historic properties included in or eligible for inclusion in the National Register of Historic places (p. 43). Conditions to protect undiscovered resources will be implemented as follows: Language will be included in construction contract specifications outlining the steps to be taken in the event that undiscovered historical properties are encountered. An informational training session, developed by a professional archaeologist, will be conducted for the contractor's personnel to explain what kinds of archaeological/cultural materials might be encountered during construction of the impoundment, and the steps to be taken in the event these materials are encountered. A professional archaeologist will conduct periodic monitoring of the project area during construction to determine if activities are impacting unanticipated cultural resources. The proposed action is consistent with these Acts.
- i. In compliance with the Clean Water Act, a water quality certificate will be obtained from the State. All State water quality requirements will be followed.

In view of the above and after consideration of public and agency comments received on the project, I have concluded that the proposed action for the rehabilitation of HHD will not result in a significant adverse effect on the human environment. This Finding incorporates by reference all discussions and conclusions contained in the EA enclosed herewith.


Paul L. Grosskruger
Colonel, U.S. Army
District Engineer

12 Jan 2007
Date

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HERBERT HOOVER DIKE DRAFT ENVIRONMENTAL ASSESSMENT

Proposed Action: Five alternatives have been proposed to reduce the probability of a breach in Reach 1 of the Herbert Hoover Dike that surrounds Lake Okeechobee, in Martin and Palm Beach Counties, Florida. Only the no-action and Alternative 5 were carried forward. Alternative 5 is the recommended action.

Type of Statement: Draft Environmental Assessment

Lead Agency: U.S. Army Corps of Engineers

Summary

The Herbert Hoover Dike (HHD), built around Lake Okeechobee in south central Florida, was originally constructed as a series of embankments by local interests in 1915 in order to provide flood protection to the surrounding communities and controlled irrigation for local agriculturists. These embankments were improved to the current levee system by the U.S. Army Corps of Engineers (Corps) during the 1930s and 1940s, and major culvert modifications were accomplished in the 1970s. Since then, only as-needed repairs have been made to the HHD. Recent high water events have caused several boils and pipings around the dike, suggesting the need for major rehabilitation. The Corps prepared a HHD Major Rehabilitation Evaluation Report (MRR) and Draft EIS (DEIS) in November 2000. The MRR primarily focused on the development and evaluation of alternatives for the rehabilitation of Reach 1, with the intent to release a supplemental MRR for the remaining Reaches. The design for Reach 1 has been modified since the release of the 2000 MRR due to a number of events, including: implementation of the Value Engineering (VE) study results, which led to preparation and coordination of a Supplemental Draft and Final EIS in 2005. More recently, application of lessons learned from Hurricane Katrina, and consideration of recommendations made from an interdisciplinary team of scientists that conducted an Independent Technical Review (ITR), led to a redesign. The alternatives previously considered are included in this document in a summary format to provide background information. The alternatives under consideration are (1) the No Action alternative, defined as not making improvements to Reach 1 and no physical changes in the study area, and (2) the Preferred Alternative, which includes an impervious cutoff wall at the crest of the dike and a stability seepage berm. The preferred alternative design is illustrated in EA Figures 2-6, 2-7, and 2-8 and consists of filling the toe ditch and depositing a seepage control berm above it, along with construction of a cut-off wall in the crest of the Dike. Urgent work is recommended for lands within the existing right-of-way only. Based on the analyses of the EA, the work will reduce seepage and piping at the most critical areas as well as offer stability and protection in the long term. Environmental effects of extending the seepage berm beyond the right-of-way will be evaluated in a supplemental EIS when more design details are known. Benefits of the rehabilitation will be increased public safety. Mitigated effects are limited to the loss of wetlands in the man-made toe ditch and the fish and wildlife that utilize this habitat. The Corps has already undertaken mitigation measures to offset the wetlands loss.

**ENVIRONMENTAL ASSESSMENT
FOR
PRIORITY TOE DITCH REPAIRS, REACH 1, 2 AND 3
HERBERT HOOVER DIKE
GLADES, HENDRY, AND PALM BEACH COUNTIES, FLORIDA**

1.0 PROJECT PURPOSE AND NEED

The Herbert Hoover Dike (HHD) consists of a series of levees, gated culverts and locks that encompass Lake Okeechobee. Construction of this dike began in 1915 as the first embankments around the lake were constructed by local interests and were primarily composed of muck, sand, shell, and marl from adjacent borrow canals. During the 1930s, a Federal interest was initiated as a result of the hurricane tides of 1926 and 1928 overtopping the original embankment and causing over 2,600 deaths. The River and Harbor Act, approved 3 July 1930, authorized the construction of 67.8 miles (109 kilometers (km)) of levee along the south shore of the lake and 15.7 miles (25.3 km) of levee along the north shore. Constructed by the Corps between 1932 and 1938, the typical crest height of these levees ranged from 32 to 35 feet (9.8 meters (m) to 10.7 m) above the National Geodetic Vertical Datum of 1929 (NGVD). A major hurricane in 1947 prompted the need for additional flood protection work in Florida. In response, Congress passed the Flood Control Act of 1948 authorizing the first phase of the comprehensive plan for flood protection and other water control. Additionally, major culvert modifications were accomplished in the 1970s.

In recent years, only as-needed repairs have been made to the HHD. However, signs of instability such as boils and piping areas have occurred during recent years that indicate major renovations are now necessary, especially along the southern portion of the HHD. In 2003, emergency operations to remediate severe piping had been taken along the eastern portion of Reach 2 and sections of Reach 3 (**Figure 1-1**). An unreliable embankment system could allow for a failure of the system to contain lake waters. Such a failure could result in loss of life, property, and habitat.

1.1 PROJECT AUTHORITY

The Herbert Hoover Dike is a component of the Central and Southern Florida (C&SF) Project. The Flood Control Act (Act), approved by Congress on 30 June 1948, authorized the first phase of a comprehensive plan to provide flood protection and other water control benefits in central and south Florida. The Act included measures for improving control of Lake Okeechobee by constructing or modifying the spillways and other structures, and enlarging the Lake Okeechobee levees to provide the intended flood protection, water storage and water supply. Levee seepage and stability have a direct effect on the capability of the levee to provide the authorized protection. The authorization for levee repairs and modifications of the Act of 1948 justify the proposed renovation to Reach 1 of the HHD. Additional authorization for the C&SF Project was authorized in the Flood Control Act of 1954, 1960, 1965, and 1968; the Water Resources Development Acts of 1986, 1988, 1990, 1992, and 1996; and the Rivers and Harbors Act of 1930.

1.2 PROJECT LOCATION

The existing HHD system is approximately 143 miles (230 km) long, and comprises five counties: Glades, Hendry, Martin, Okeechobee, and Palm Beach. It is divided into eight segments or “Reaches” for planning purposes. The southeastern segment, Reach 1, is the focus of the present study. Reach 1 is an approximately 22.4 miles (36 km) long segment of the HHD located along the southeast portion of the lake. This segment extends from the St. Lucie Canal at Port Mayaca, south to the Hillsboro Canal at Belle Glade (**Figure 1-1**).

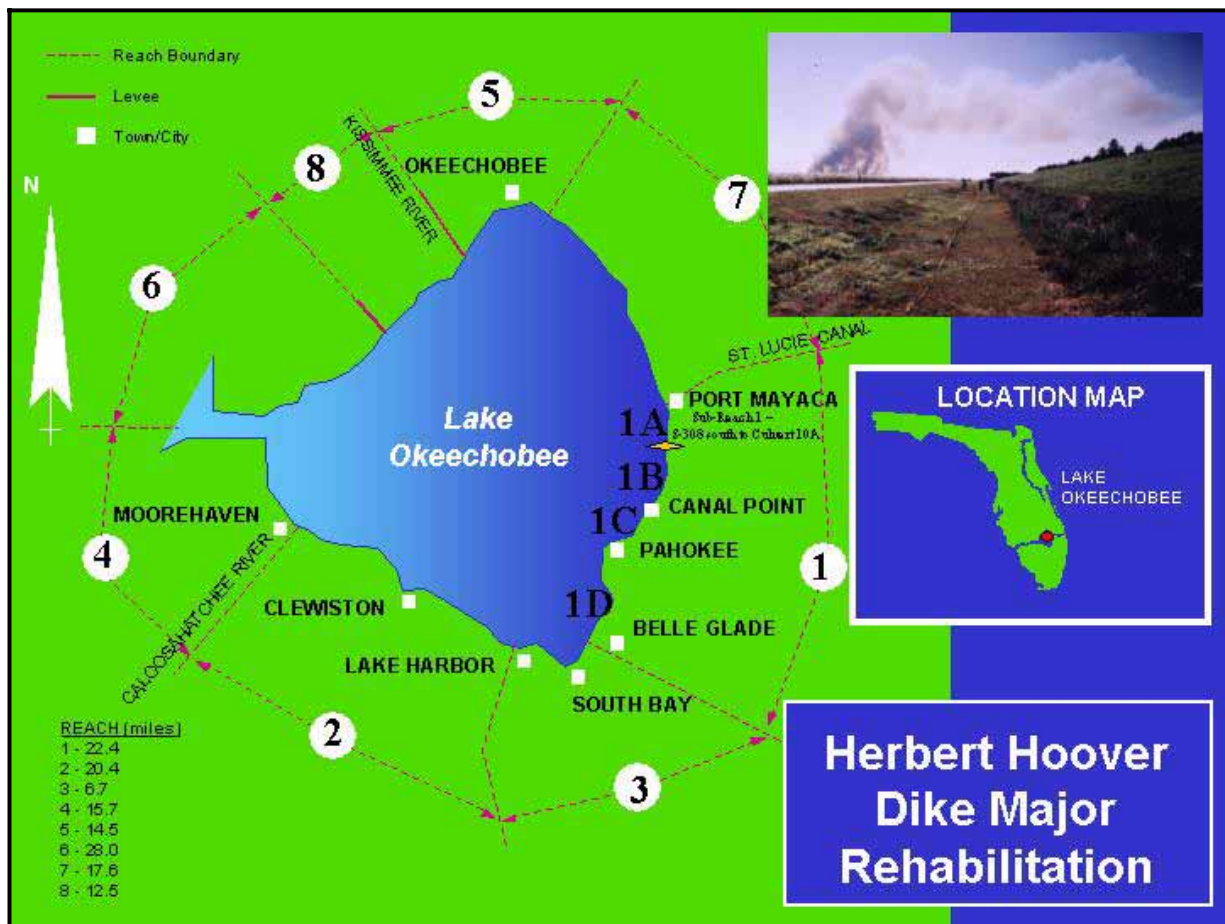


FIGURE 1-1: PROJECT LOCATION MAP

1.3 PROJECT NEED OR OPPORTUNITY

The HHD, constructed largely of local material (e.g., mud, muck, sand, shell fragments) and with porous limestone bedrock underlying the levee, has been experiencing a high degree of seepage under and through the levee. This seepage resulted in several boils and piping during the 1995 (**Figure 1-2**) and 1998 high water events. The most significant occurrences were found along Reach 1. Piping and sand boil occurrences have also occurred when there is not a high water event, as shown in **Figure 1-3**. This is an evident concern and demonstrates the need for immediate repair of the dike in the most critical areas.

An unreliable embankment system, such as that which currently exists along Reach 1 of the HHD, could allow for a failure of the system to contain lake waters. Such a failure could result in loss of life, property, and habitat. A reasonable and effective rehabilitative effort is required to eliminate this possibility.



FIGURE 1-2: SEEPAGE AND MANAGEMENT CONTROL IN TOE DITCH (1995)



FIGURE 1-3: ACTIVE SEEPAGE AND PIPING MANAGEMENT IN TOE DITCH (2003)

1.4 AGENCY OBJECTIVE

The Corps conducted a structural and stability analysis study on the HHD that culminated in a Major Rehabilitation Report (MRR), dated November 2000 for Reach 1. The general goal of the HHD MRR was to provide a reliable embankment system around Lake Okeechobee to contain the lake waters for flood protection, water supply, and navigation. In July 2002, a Value Engineering (VE) study was completed to further refine the engineering alternatives and attempt to limit the area of environmental impact of the preferred alternative. In addition, emergency repairs and early design documents modified the preferred alternative to further reduce project impacts on wetlands and fish and wildlife habitat. This modification was presented as the preferred alternative (Alternative No. 4) in the “Herbert Hoover Dike Major Rehabilitation Evaluation Report Reach 1, Final Environmental Impact Statement, dated July 2005”. Subsequent to lessons learned from Hurricane Katrina and input from an external, independent team of scientists, the preferred alternative was modified to provide a solution that would immediately address seepage due to piping or internal erosion at the most critical areas of the dike as well as provide a reliable, long-term solution for the rehabilitation of the Dike.

1.5 RELATED ENVIRONMENTAL DOCUMENTS

The following is a list of related NEPA, design and planning documents:

- Final Herbert Hoover Dike Major Rehabilitation Report and Environmental Impact Statement, November 2000.
- Draft and Final Herbert Hoover Dike Major Rehabilitation Evaluation Report, Reach One, Final Environmental Impact Statement, March 2005 and July 2005. The Record of Decision was signed in 2005.

1.6 DECISION TO BE MADE

This Environmental Assessment will evaluate an additional alternative to the four alternatives evaluated in the above listed Final EIS, dated July 2005 to accomplish levee restoration in Reach 1 of Herbert Hoover Dike. This alternative is similar to an alternative developed in the HHD MRR in 2000, but was not chosen by the State and Federal partners because it required additional and costly acquisition of real estate and may have impacted regional ground water. Subsequent to Hurricane Katrina levee failures the Corps conducted a nationwide dam/levee safety review. This review identified HHD as a “Class 1 – Urgent and Compelling” dam in active failure. This shifted the Corp’s focus to public safety and risk reduction as the number one priority. The Corps convened an interdisciplinary team of scientists to further evaluate the design of the preferred alternative through an Independent Technical Review (ITR). Based on recommendations resulting from the ITR the Project Delivery Team (PDT) modified the design of the preferred alternative as recommended in this EA.

1.7 PERMITS, LICENSES, AND ENTITLEMENTS

Refer also to Section 4.12 Compliance with Environmental Requirements.

The proposed HHD repairs are subject to Section 404 of the Clean Water Act and would require Water Quality Certification from the FDEP. The FDEP has already issued an exemption for Water Quality Certification for work along Reach 1A. The Section 402(b) National Pollutant Discharge Elimination System (NPDES) permit will be required for construction activities that disturb more than 5 acres of land. This permit will be acquired prior to the initiation of construction.

The local Sponsor, South Florida Water Management District (SFWMD), has the responsibility for acquiring all lands and easements for project implementation.

2.0 ALTERNATIVES

This section describes the no-action alternative and the current preferred alternative (No. 5). Alternatives No. 1 through No. 4 are also summarized below; they were previously evaluated during the development of Final EIS, dated July 2005, but are no longer under consideration due to the change in focus to public safety and health.

2.1.1 No Action Alternative

The No Action Alternative is defined as not taking actions or making physical alterations to improve or repair the HHD within Reach 1. It would maintain the current condition of the dike (**Figure 2-1**). The No Action Alternative would not provide acceptable compliance with current regulation requirements of safety factors relative to dike stability. Without acceptable improvements to the HHD, the safety of the surrounding human and natural environment may be severely impacted with subsequent effects upon the local and regional economies. The continuation of seepage, piping and boils occurring in this area would increase the potential for local flooding due to rainfall and runoff. In the event of a total breach significant impacts to human life, existing soils, vegetation, water resources, habitat, threatened and endangered species, agriculture and property would result.

The No Action Alternative does not provide a long-term solution to the seepage and stability problems existing along Reach 1, 2 and 3.

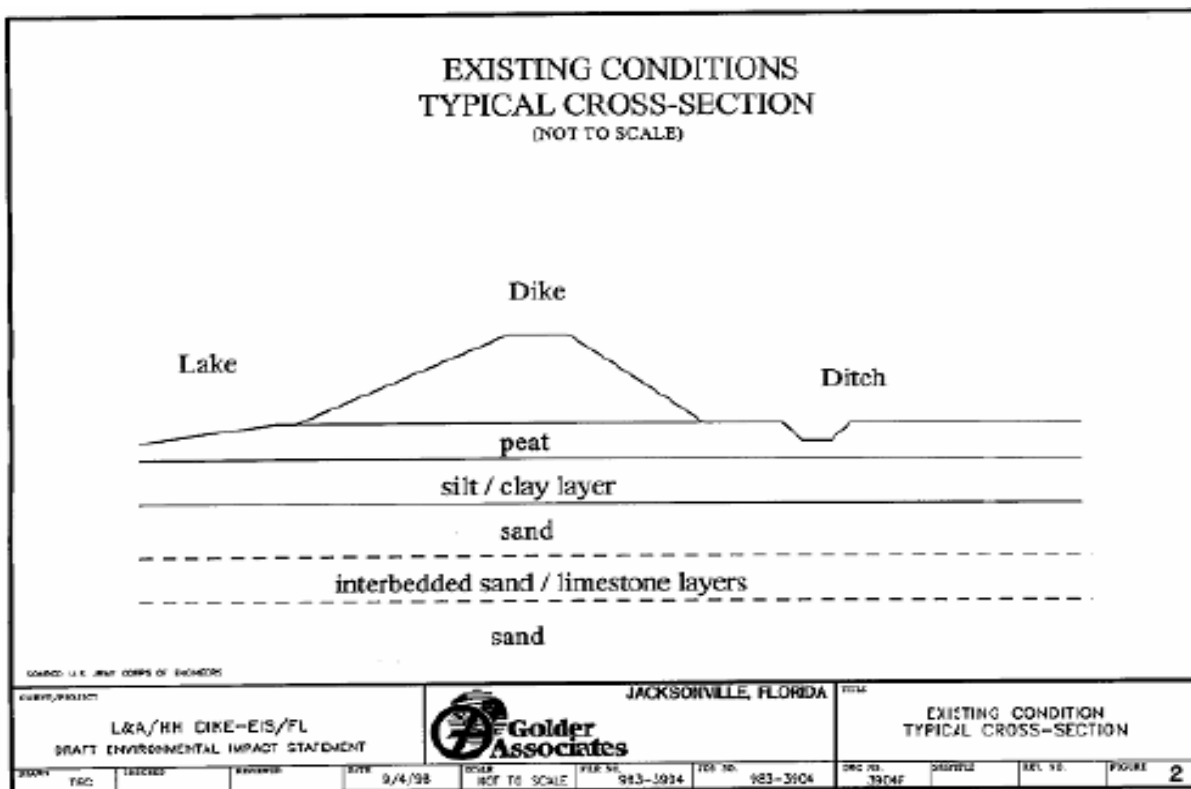
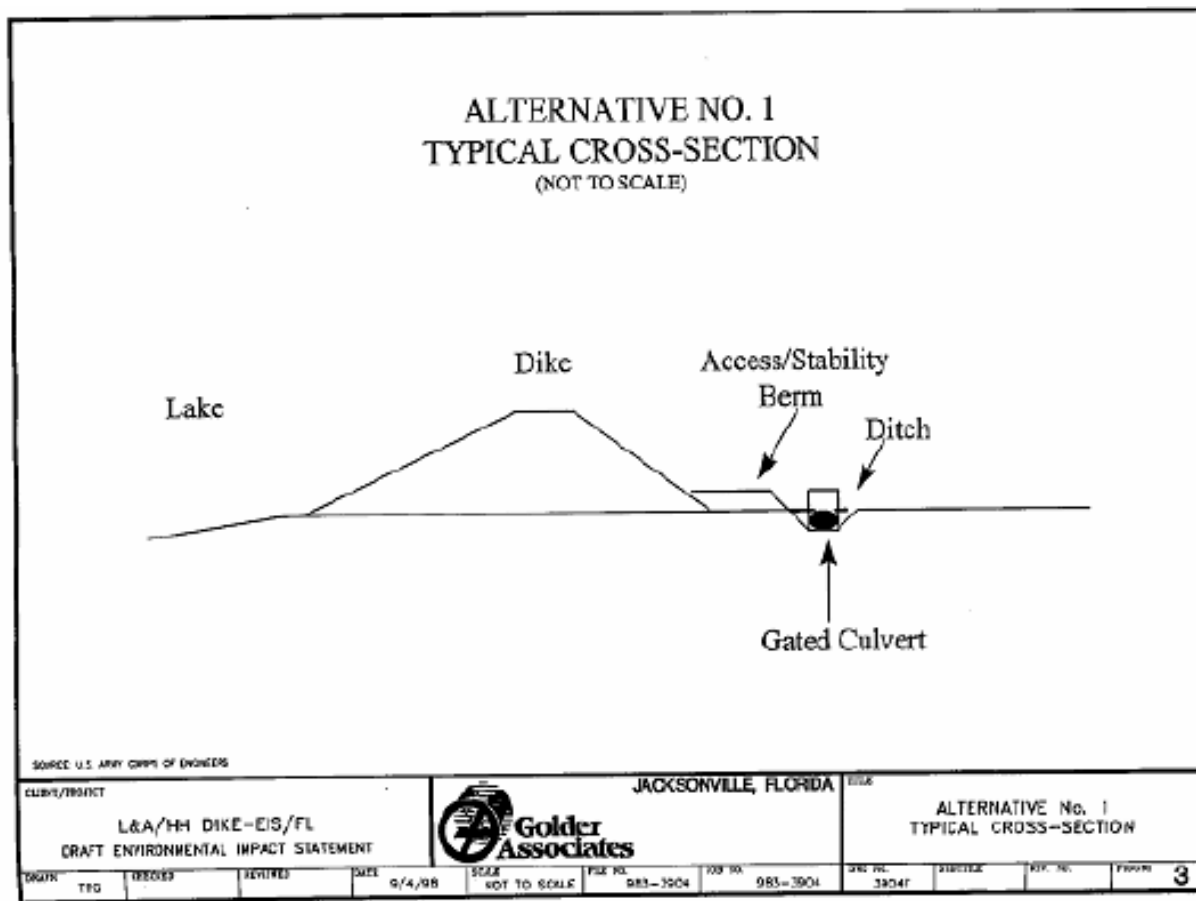


FIGURE 2-1: NO ACTION ALTERNATIVE (EXISTING CONDITIONS)

2.1.2 Alternative No. 1

This alternative includes increasing the water level in the drainage ditches and the construction of a stability berm at the landside toe of the levee (**Figure 2-2**). Alternative No. 1 would improve the existing drainage ditches by cleaning out the ditches and re-grading the ditches. Culverts with automatic/manual gates and pumps would be installed to control the water level in the ditches. During critical high water periods, the water level in the ditches would be raised in order to limit the differential head across the levee. Raising the water levels in the ditches would increase the local flooding potential due to rainfall and runoff. Presently, local drainage districts and farmers control most of these ditches.

This alternative does not provide adequate protection from the seepage and stability problems that threaten critical areas of the HDD.



2.1.3 Alternative No. 2

Alternative No. 2 involves an upstream (lakeside) impervious cutoff wall and a landside stability berm at the toe of the levee (**Figure 2-3**). The cutoff wall would impede groundwater flow. This is the most positive method of underseepage control because it reduces both uplift pressure and through seepage. The wall would consist of a 3 ft (0.9 m) wide, 60 ft (18 m) deep excavation filled with soil-bentonite or soil-cement mixture. The top of the wall would be at an approximate elevation of 25 ft (7.6 m). The cutoff wall would affect the upper aquifer and may lower the groundwater table, thereby affecting local adjacent farms. A landside stability berm as described in Alternative No. 1 would also be constructed. Due to the intensive construction effort, costs, and the effects of the cutoff wall to the local groundwater regime, this action was not selected as the preferred alternative at time the FEIS was produced.

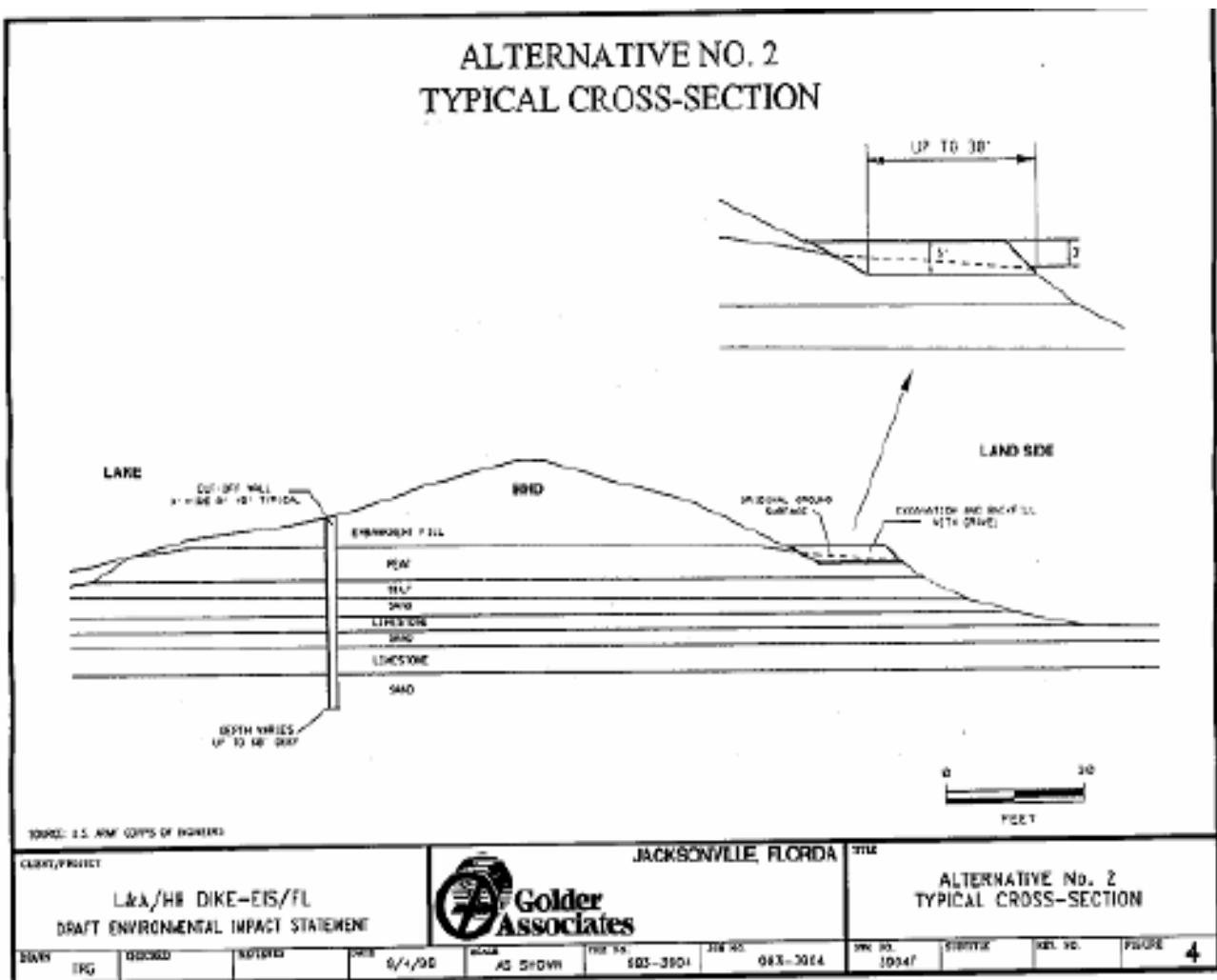


FIGURE 2-3: ALTERNATIVE NO. 2

2.1.4 Alternative No. 3

Alternative No. 3 includes the installation of a seepage berm with a relief trench and a french drain system along the landward toe of the HHD (**Figure 2-4**). In areas where the HHD toe rests on a peat layer, construction of the seepage berm would begin with excavation of peat material from the landside toe. No excavation would be performed at higher elevations of the embankment slope.

The seepage berm would be constructed along the lower portion of the embankment toe. In areas where a toe ditch now exists, the ditch would be replaced by the proposed seepage berm. The landward side of the berm would contain perforated culvert. A deep relief trench would be excavated immediately below the culvert within the toe ditch and along its entire length. The berm would prevent the piping of sands and silts from the embankment and its foundation. The relief trench is designed to control uplift pressures and prevent seepage and piping flows from extending landward of the embankment. The perforated culvert system would collect and convey seepage flows to controlled outlets that empty into existing drainage canals. A drainage swale would also be constructed along the landward toe of the berm to collect and convey surface drainage from each side of the drainage berm.

Implementation of Alternative No. 3 would improve slope stability and seepage control. However, in emergency implementation of this alternative on a one-mile stretch of Reach 1, the design demonstrated lack of ability to control seepage that would resurface on adjacent properties. Therefore, this alternative has not been selected.

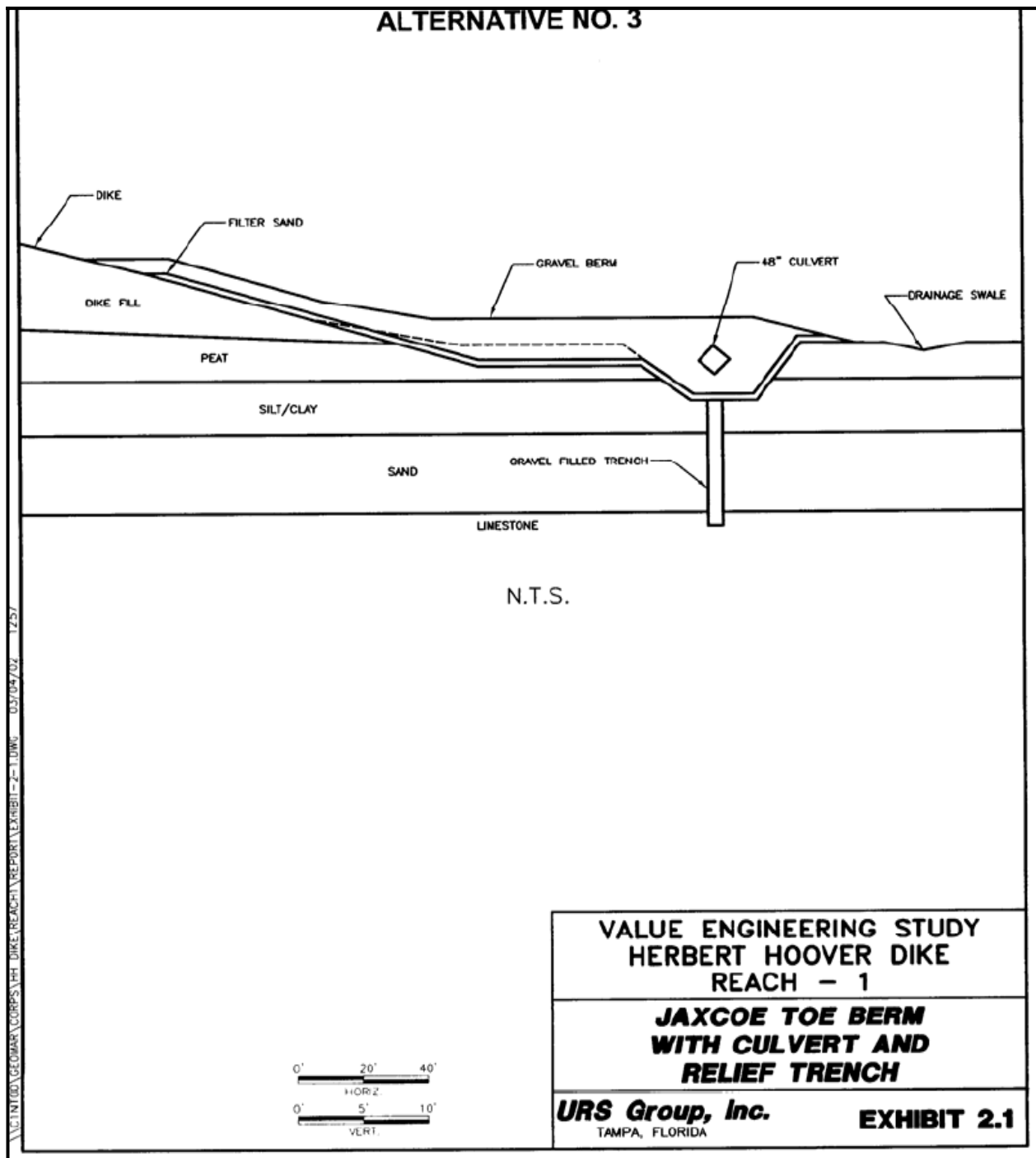


FIGURE 2-4: ALTERNATIVE NO. 3

2.1.5 Alternative No. 4

Alternative No. 4 was the preferred alternative of the FEIS, dated July 2005. The design included a hanging seepage cutoff wall on the landward side of the dike slope and a relief trench with an inverted filter and relief berm at the toe of the landward slope of the dike, stopping at the HHD's toe ditch. The relief trench and inverted filter would be constructed adjacent to the existing toe ditch and within the HHD footprint at the landward toe. An access road would be built on top of the relief trench. The plan is similar to the MRR solution Alternative No. 3, but would not contain a closed conduit as outlined in the MRR and utilizes the hanging cut-off wall to prevent piping. The closed conduit would be replaced with the existing open toe ditch for removal of seepage. Seepage water from the seepage toe berm and relief trench would flow freely into the existing toe ditch. The toe ditch geometry may have to be altered on the lakeward side of the ditch due to construction of the trench and drain system. The final design would insure no negative impact on flood control.

The initial (2005) decision to select this alternative was based on its relatively lower overall cost, and the belief, at the time the decision was made, that the selected plan provided adequate margins of safety and protection from dike failure. Recent reviews of dike safety, both external and internal to the Corps, coupled with experiences and lessons learned in the aftermath of Hurricane Katrina, have led the Corps to re-evaluate the margin of safety required and re-evaluate the overall plan, leading to recommendations for further reinforcements of Reach 1 (see Alternative 5).

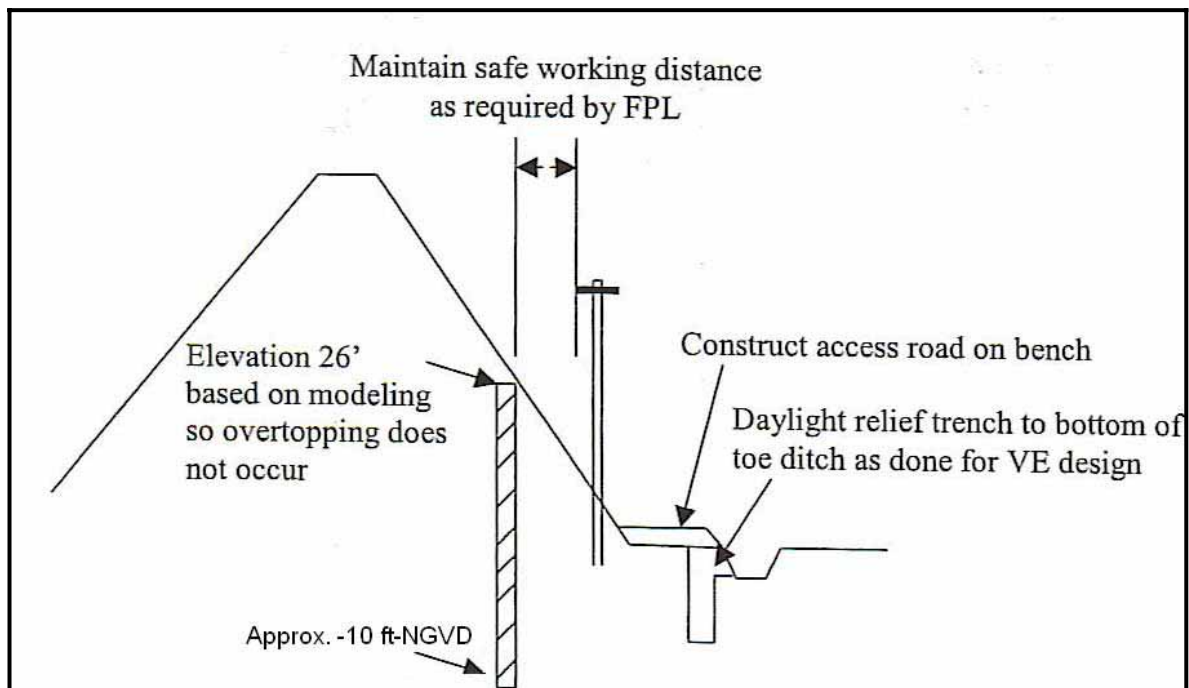


FIGURE 2-5: ALTERNATIVE NO. 4

2.1.6 Alternative No. 5 (Preferred Alternative)

Alternative No. 5 is the preferred alternative (**Figure 2-6**). Previously, the local sponsor requested that the preferred alternative design be within the existing ROW, this resulted in a less robust design (Alternative No 4). Shift of focus to public safety, and technical concerns related to the previous design, led the Corps to re-evaluate the need for a more robust and redundant plan. This plan will be more costly than the previously selected alternative, but it will provide greater stability and control of seepage and boils.

The design consists of a landside seepage berm and cutoff wall to provide protection at the toe of the dike, to increase stability, and reduce seepage. Since the seepage berm is relatively easy to construct, reliable, and a separable element it can be implemented immediately in the most critical areas of the dike where adequate space is available. At the conceptual level, the seepage berm will extend approximately 150 ft from the toe of the dike. This EA is evaluating environmental effects of the seepage berm within the existing ROW. A future NEPA document will be produced to assess the effects of the seepage berm outside the existing ROW. A drainage swale would also be constructed along the landward toe of the berm to collect and convey surface drainage from each side of the seepage berm. An impermeable cut-off wall will be implemented at the crest of the dike and extend approximately 10 feet below the first limestone layer. The cut off wall will provide resiliency against seepage caused by piping and groundwater flow. The width of the wall will be 2 feet. The cut-off wall material will be decided after the plans and specifications are prepared.

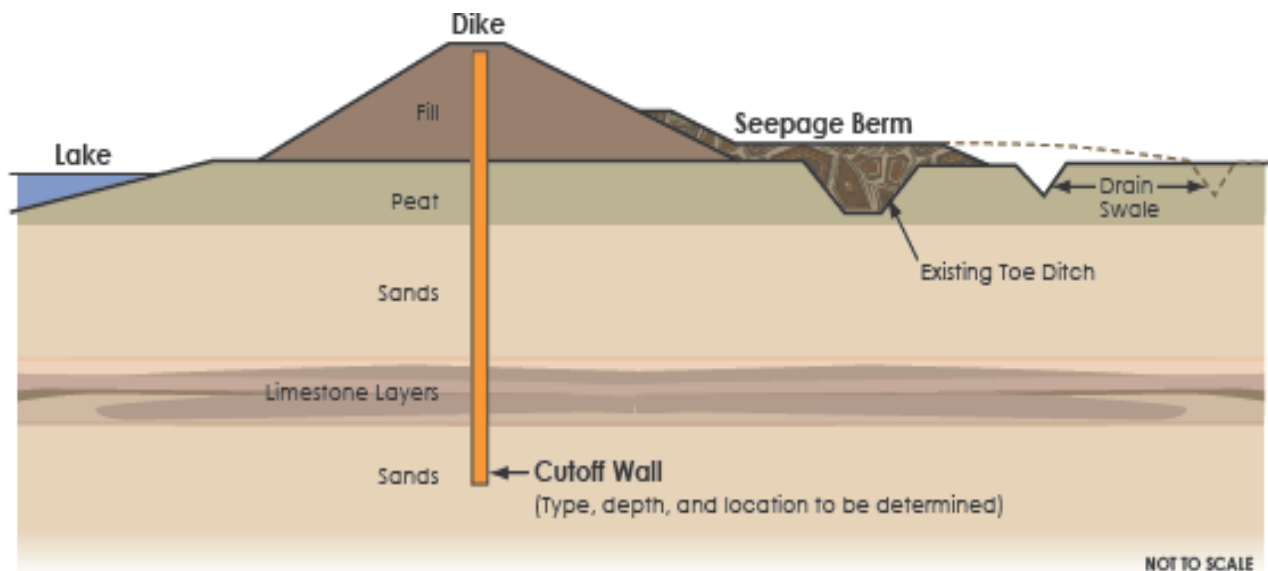


FIGURE 2-6: ALTERNATIVE NO.5 (PREFERRED ALTERNATIVE)

In an effort to expedite the rehabilitation of HHD, the Corps has identified nine priority areas P-0 (highest priority) through P-8 (lowest priority) where immediate repairs can be implemented (**Figure 2-7 and Figure 2-9**). These areas were identified based on possible decreased factors of safety of the levee in these areas attributable to continual seepage boils during high water conditions in the lake (above 15 ft NGVD). Six priority areas are located in Reach 1. Immediate stability can be provided to the dike by backfilling the toe ditch at the priority areas that are within the existing ROW (P-0, a portion of P-1, P-3, P-4, P-5, and P-7). P-6 and a portion of P-1 require additional land acquisition. These portions, along with any additional land acquisition areas needed for the 150 ft seepage berm delineation (from the toe of the dike) will be covered in a later NEPA document when the exact footprint is identified. Priority area P-2 is a borrow pit and requires a different fix that will not be evaluated in this EA. Although P-3 and P-8 are located in Reaches 2 and 3, they are considered part of this alternative only for toe ditch repairs because they are urgent areas in need of immediate attention. A more comprehensive plan for the entirety of Reaches 2 and 3 will be released in the subsequent Supplemental MRR and EIS. The priority areas can be stabilized immediately by backfilling the toe ditch with sand and gravel (**Figure 2-8**). The design of the swale is based on capturing 1" of rainfall over an average width of 100 ft of levee backslope. The swale will be temporary until the full toe seepage berm is implemented in these priority areas. Repairs in the priority areas within the existing ROW will equate to approximately 6.0 acres of toe ditch backfilled. Aerial views of the priority areas in Reaches 1, 2, and 3 are provided below as listed: P-0 (Figure 2-10), P-1 (Figure 2-11), P-2 (0, P-3 (Figure 2-13), P-4 (Figure 2-14), P-5 (Figure 2-15), P-6 (Figure 2-16), and P-7 (Figure 2-17), P-8 (Figure 2-18).



**FIGURE 2-7: PRIORITY AREAS IDENTIFIED FOR IMMEDIATE REPAIR
(NUMBERS WITHIN CIRCLES INDICATE THE “REACHES” OF THE DIKE)**

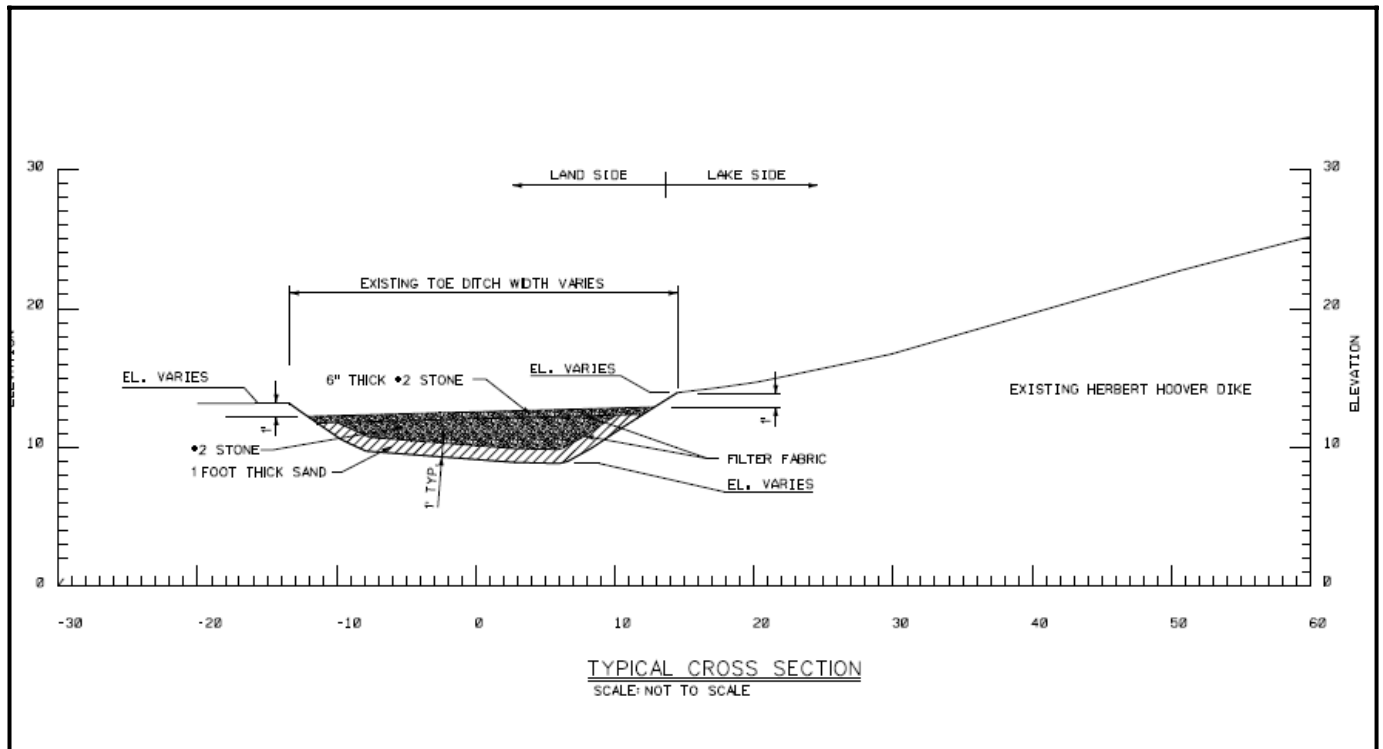


FIGURE 2-8: CROSS SECTION OF TYPICAL TOE DITCH BACKFILLING

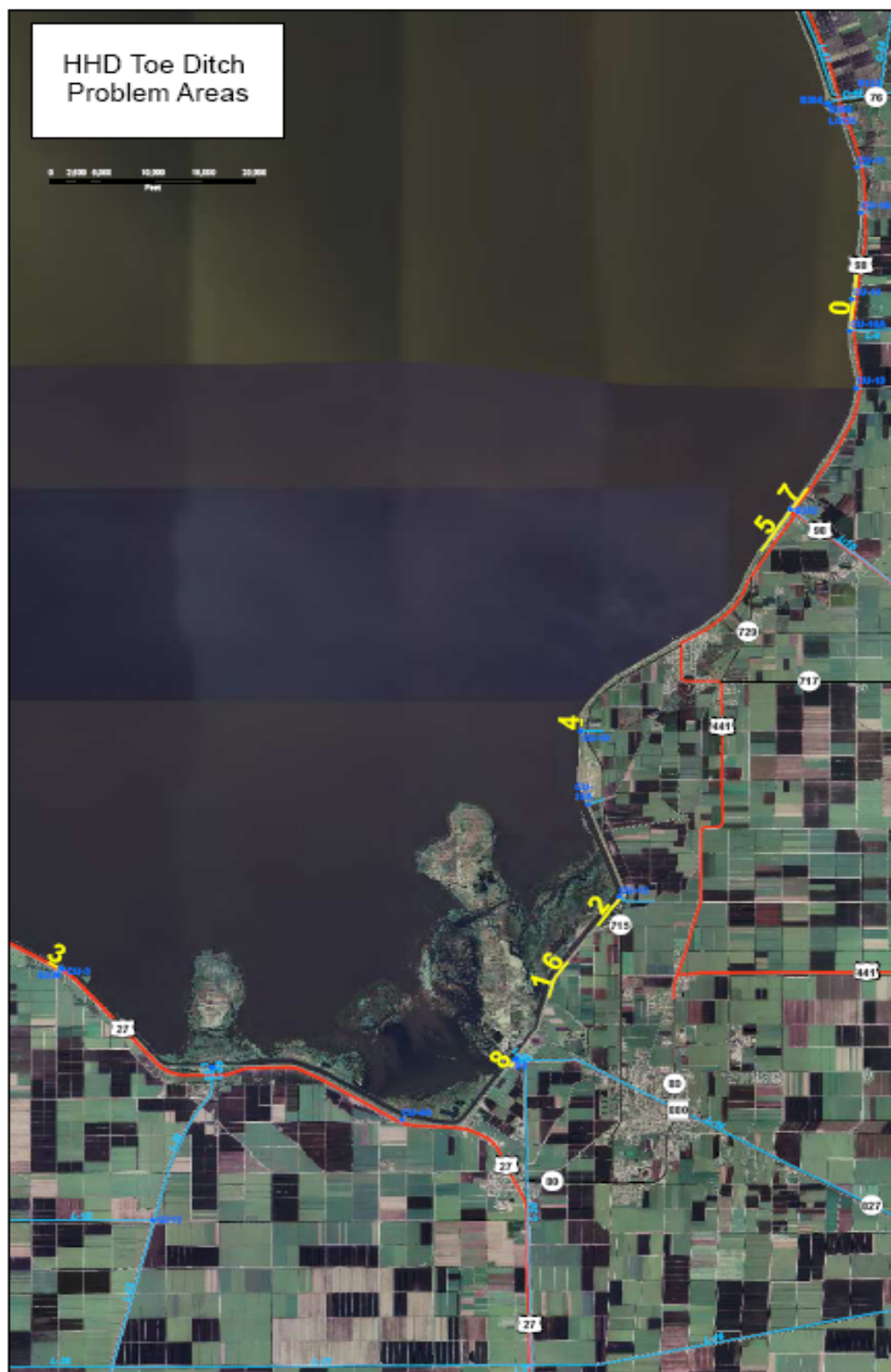


FIGURE 2-9: AERIAL VIEW OF PRIORITY AREAS



FIGURE 2-10: PRIORITY AREA 0, SAND CUT (6000 FT NORTH OF C-10A)



January 2007

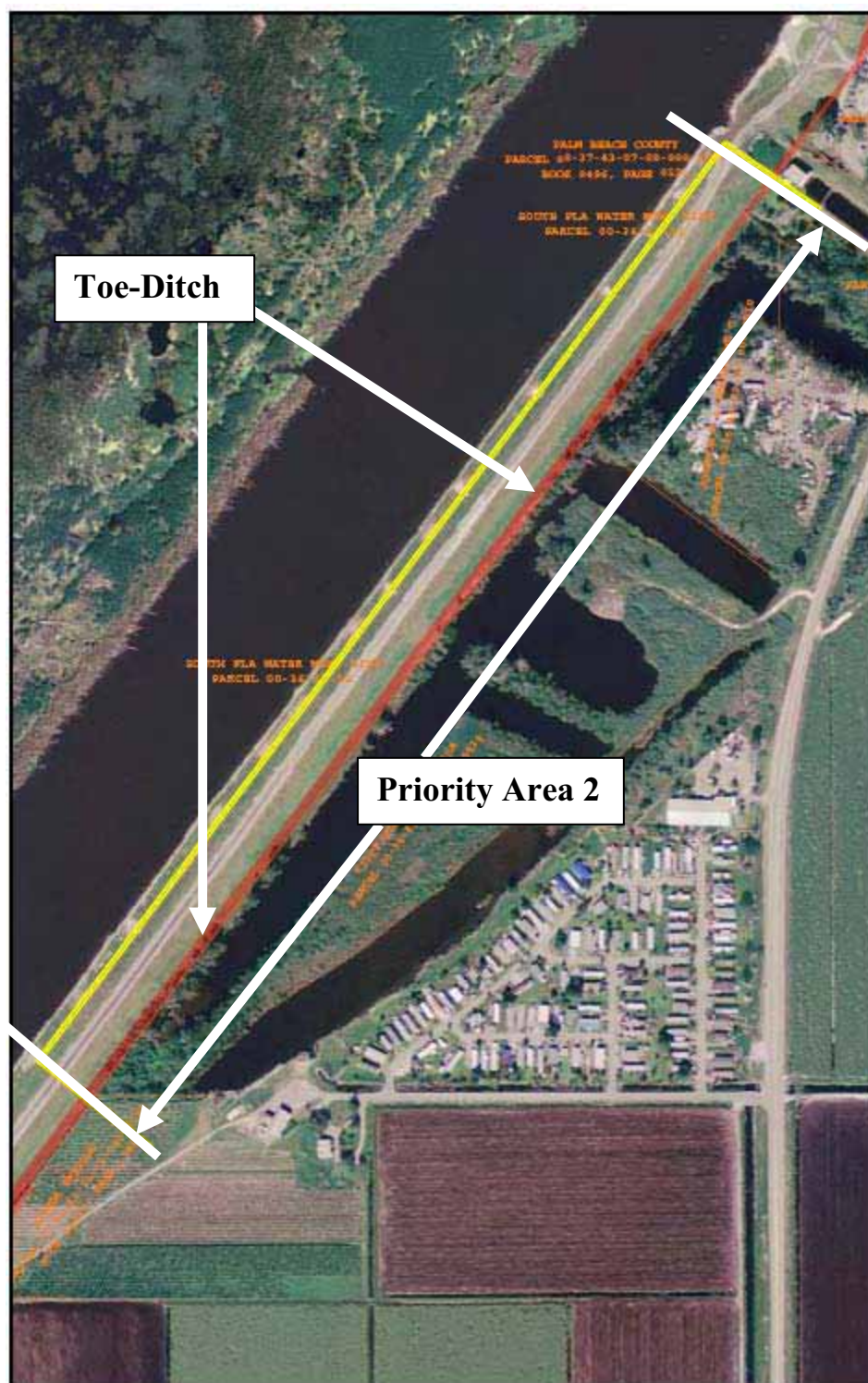


FIGURE 2-12: PRIORITY AREA 2 (RARDIN PK TO SOUTH END OF QUARRY)

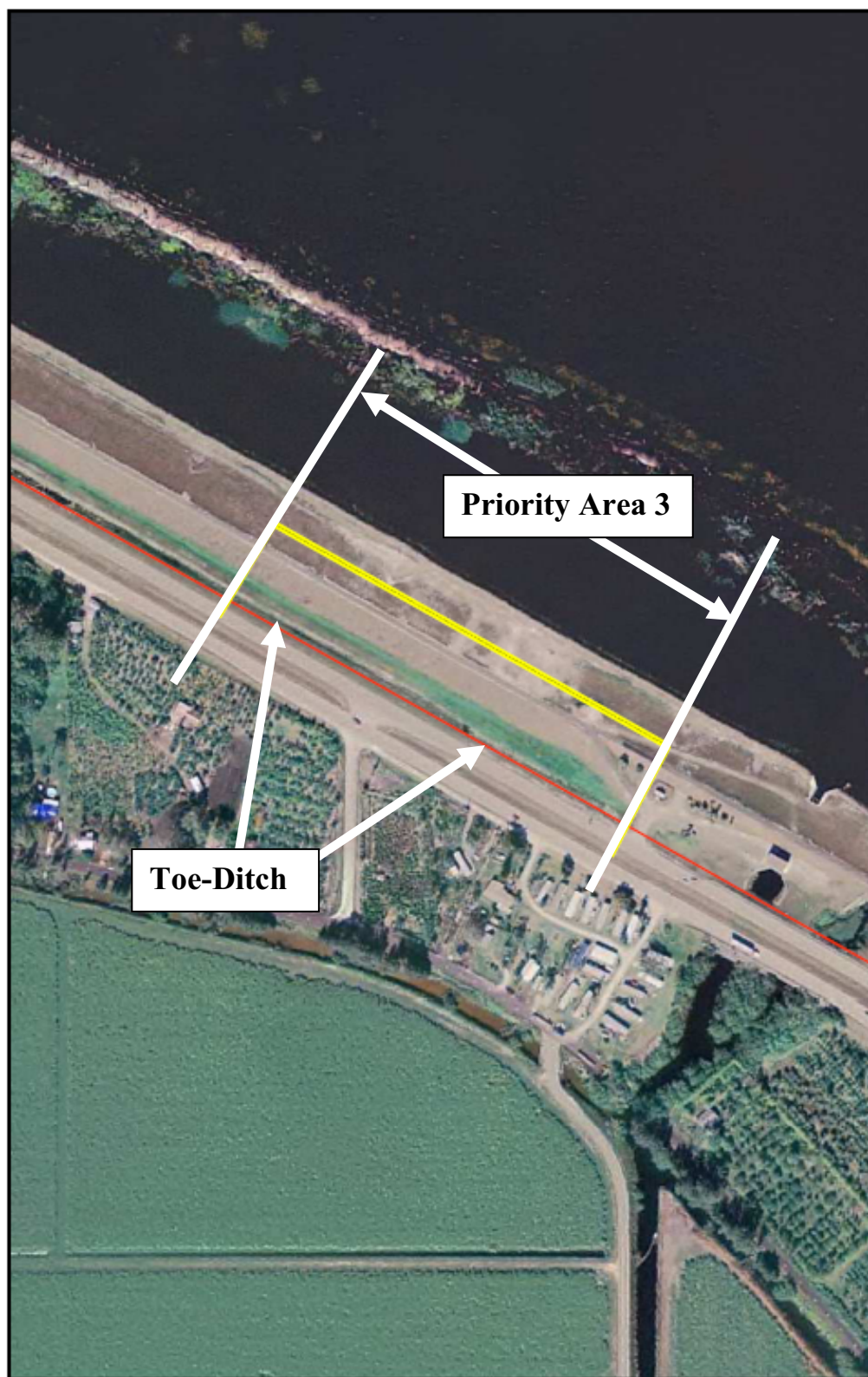


FIGURE 2-13: PRIORITY AREA 3 (WEST OF S-236)

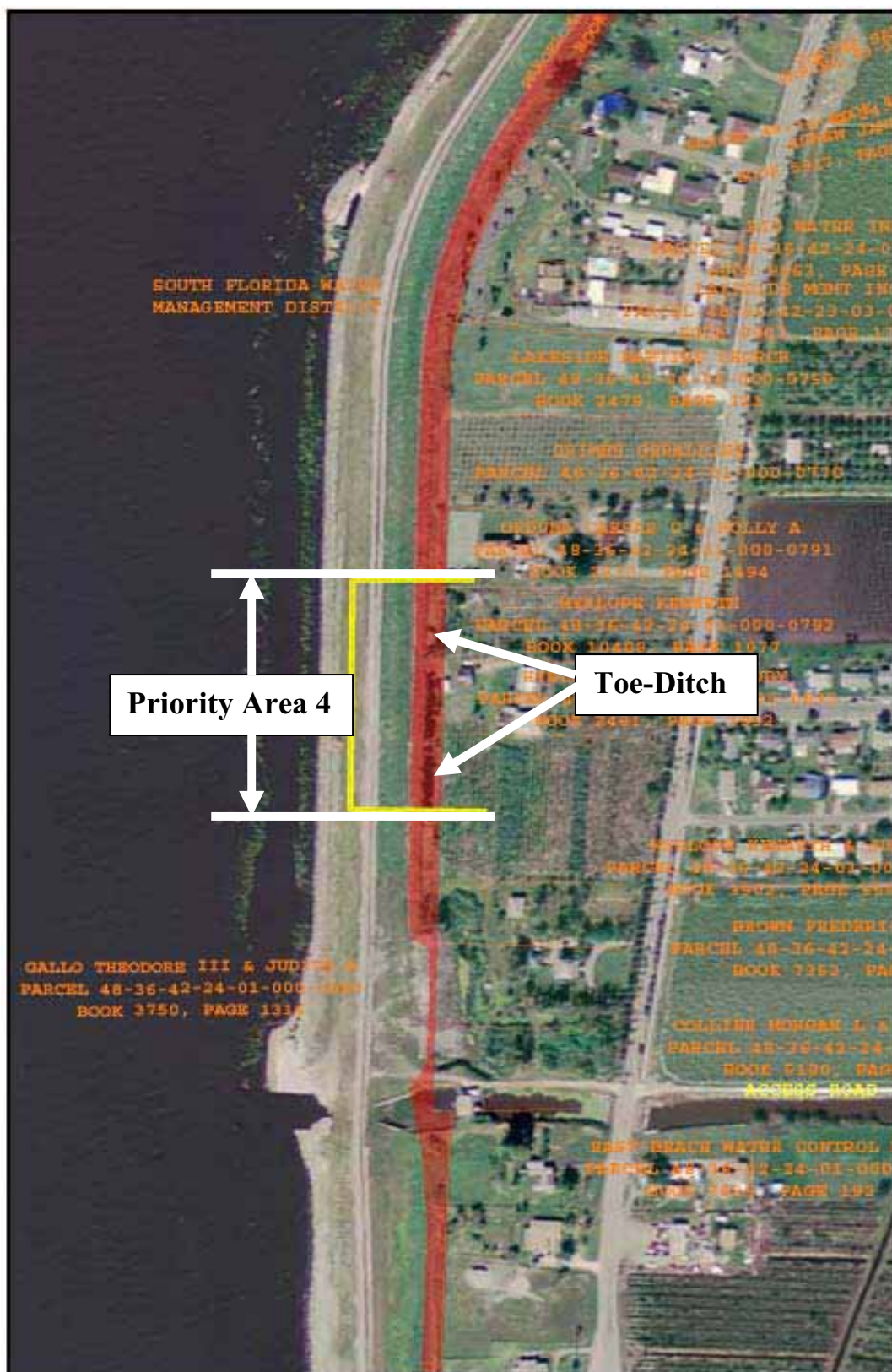


FIGURE 2-14: PRIORITY AREA 4 - (1/4 MILE NORTH OF C-10 FOR 500 FT)

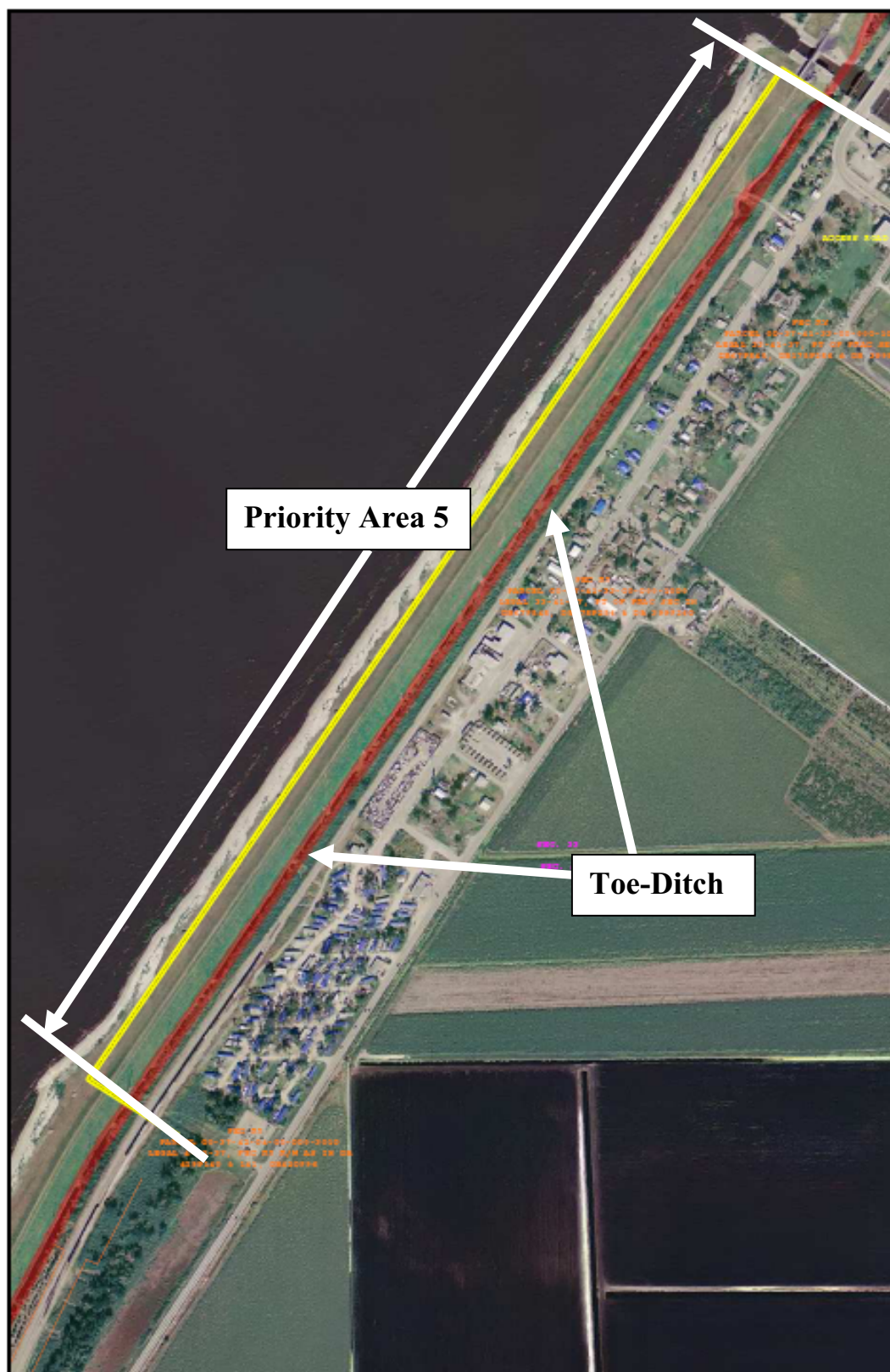


FIGURE 2-15: PRIORITY AREA 5 (S-352 SOUTH FOR ONE MILE)

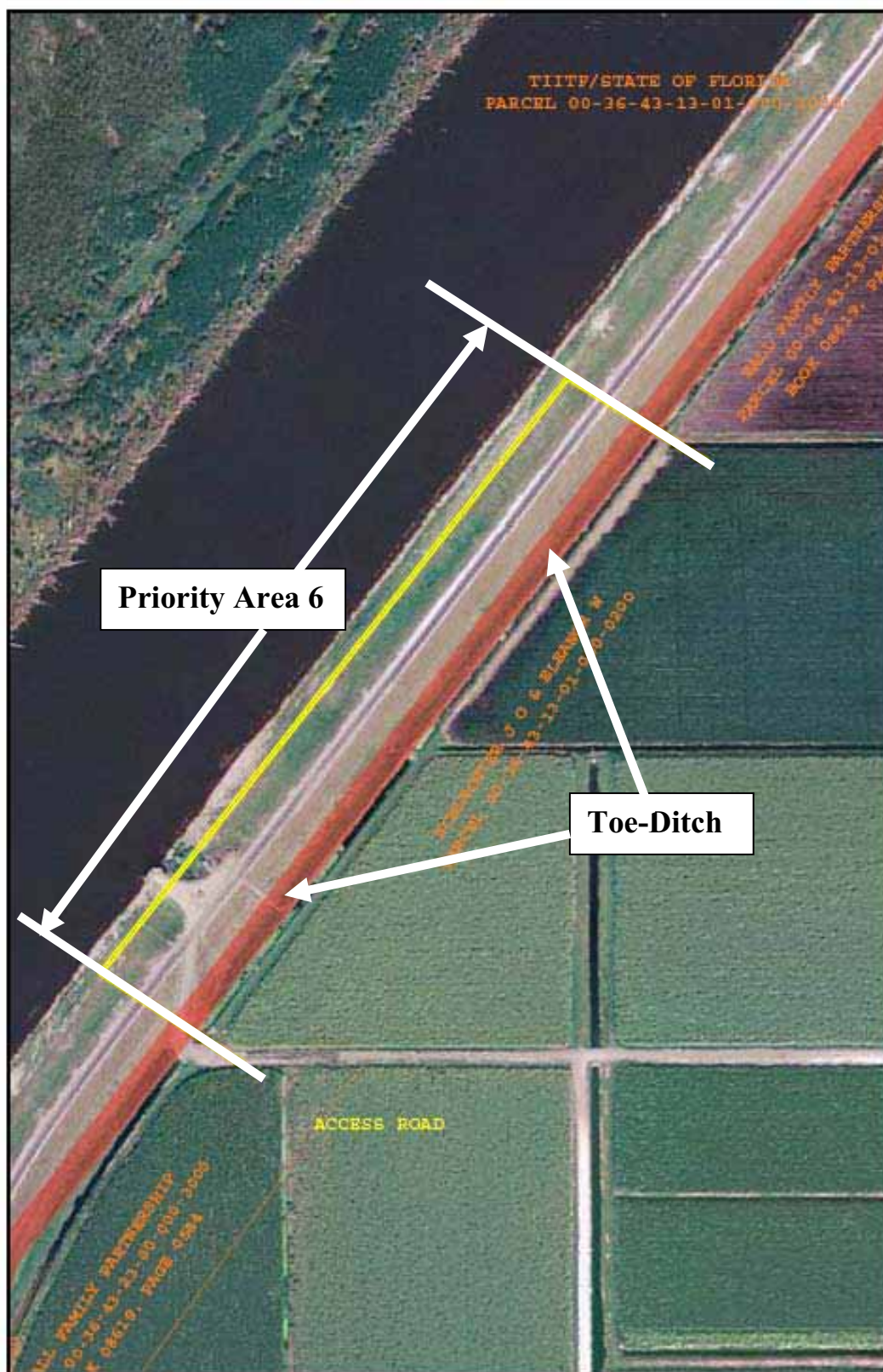


FIGURE 2-16: PRIORITY AREA 6 (SUGAR RAMP NORTH A 1/4 MILE)



FIGURE 2-17: PRIORITY AREA 7 (S-352 NORTH FOR 1/2 MILE)

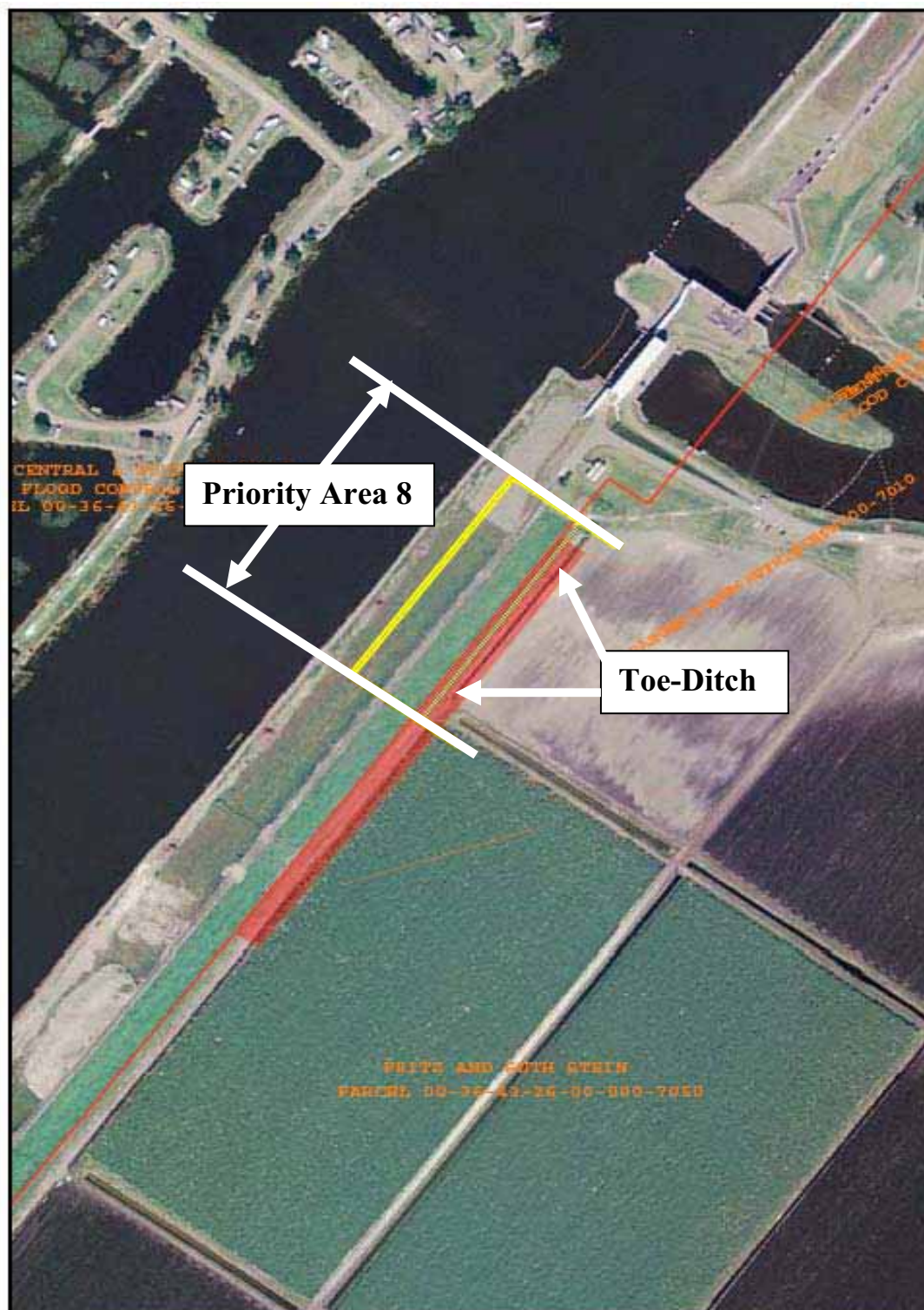


FIGURE 2-18: PRIORITY AREA 8 (SOUTH OF S-351)

2.2 COMPARISION OF ALTERNATIVES

Table 4-1 lists the alternatives under consideration and summarizes the major features and consequences of them. See Section 4.0 Environmental Consequences for a more detailed discussion of impacts of alternatives.

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3.0 AFFECTED ENVIRONMENT

3.1 INFORMATION

The wetlands environment in Reach 1 and associated protected species is discussed below; it is anticipated that the majority of impacts from this project will be isolated in this area. A more comprehensive, detailed discussion of the Reach 1 environment can be referenced in the “Herbert Hoover Dike Major Rehabilitation Evaluation Report, Final Environmental Impact Statement”, dated July 2005. Section 3.0 of the FEIS report describes the environment surrounding Reach 1 of the HHD and Lake Okeechobee as it currently exists. Environmental components include physical, biological, social, and economic resources. This Section does not present effects, but puts forth the baseline environment for comparisons in Section 4.0 - Environmental Consequences.

3.1.1 Wetlands in Reach 1

On the landward side of Reach 1, remaining wetlands are typically found along ditches or low lying areas and are usually a result of impoundment rather than natural hydrology. The majority of these are small, isolated freshwater wetlands located in the northern portion of Reach 1 within the strip of land between the HHD and the transportation corridor (Hwy. 98/441 and the Florida East Coast Railroad). Typical vegetation in these wetlands includes Carolina willow, water hyacinth, cattails, water lettuce, and duckweed. Along the toe ditch of the HHD, there are a number of places where impoundment of water also occurs. These impoundments are typically small areas occupying less than one hectare (2.47 acre) and host a similar set of hydrophilic vegetation.

Although wetlands present on the landward side of Reach 1 may not be considered high quality ecosystems, they do host small fishes and invertebrates and provide usable foraging habitat for wading birds, alligators, and turtles. A team of biologists from the USACE and USFWS completed a Wetlands Rapid Assessment Procedure (WRAP) to determine the value of the wetlands habitat within Reach 1. Applying the results of the WRAP analysis, the wetland value at all identified priority areas is equivalent to 4.0 habitat units. The wetland value at the identified priority areas within the existing ROW is equivalent to 3.8 habitat units; Table C-1, located in Appendix C, contains these calculations.

3.1.2 Protected Species

There is no critical habitat for listed endangered species along the outer toe of HHD. Listed species that might be observed in the region include wood stork (E=endangered), snail kite (E; critical habitat inside HHD in Lake Okeechobee littoral zone), eastern indigo snake, bald eagle, and Audubon’s crested caracara. The burrowing owl, a state listed species of special concern, may also be present.

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4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This section discusses potential impacts to the existing environment, including direct, indirect, and cumulative effects that may result from implementation of the proposed Preferred Alternative compared to the No Action alternative. Assessment of the No Action Alternative includes an increased probability of unsatisfactory performance of the dike system, or possible dike failure. Assessment of the Alternative No. 5 involves impacts associated with construction and utilization of Alt No. 5 on the existing environment. A summary of environmental consequences is displayed in Table 4-1.

4.2 THREATENED AND ENDANGERED SPECIES

American alligator

Alligator mississippiensis

No Action Alternative

The American alligator should incur only minimal short-term impacts in the event of a dike failure both waterward and landward of the HHD. Flexibility in habitat usage and mobility should allow this animal to survive in the Lake Okeechobee region even in the event of major water level drop. If a dike failure should occur during nesting season, the impacts waterward should be minimal since water levels are not expected to decrease significantly during such an event. However, the potential for impacting nests landward of the dike exists in the immediate vicinity of a breach.

Alternative No. 5

Impacts to the American alligator resulting from implementing Alternative No. 5 would be minimal to moderate. Any impacts would be limited to the immediate area of construction.

Eastern Indigo Snake

Drymarchon corais couperi

No Action Alternative

The indigo snake would likely only be affected minimally in the event of a dike failure. Low utilization of areas waterward of the HHD, would limit potential impacts. The levee itself provides useable habitat for the indigo snake, but a dike failure would only directly affect animals in the immediate vicinity. Landward, this animal is rarely observed due to sub-optimal habitat. Any impacts would be minimal, and only in the immediate area of the dike failure.

Alternative No. 5

Impacts to the indigo snake resulting from implementing Alternative No. 5 would be minimal to moderate, and limited to the immediate area of construction. Considering the quality of existing habitat for the eastern indigo snake along the lower third of the HHD, construction impacts may occur, but impacts to snakes will be mitigated by proper implementation of an environmental protection plan (see Section 4.10 Environmental Commitments).

Bald Eagle*Haliaeetus leucocephalus***No Action Alternative**

The slightly lower water levels resulting from a dike failure should impact the bald eagle to a minimal extent. The expected decrease in water level is too minor to significantly affect its foraging activities around the lake.

Alternative No. 5

Impacts to the bald eagle resulting from implementing Alternative No. 5 are expected to be minimal. However, the existence of an active bald eagle nest could alter construction plans. An active nest within 1500 ft (457 m) of the HHD would restrict construction activities during nesting season. Surveys for active bald eagle nests would be conducted prior to construction. Bald eagle nesting areas would be subject to USFWS Nesting Protection Measures, where applicable.

Implementation of the selected alternative should not have any significant impacts to the bald eagle along the remaining reaches of the HHD.

Wood Stork*Mycteria americana***No Action Alternative**

Impacts to the wood stork in the event of a dike failure would be minimal. Slightly lower lake levels could result in slightly less foraging habitat around the lake. Any nesting colonies could be deserted if de-watered at a critical nesting time during the year; however, reduction in lake level due to breaching would be minimal.

Alternative No. 5

Impacts to the wood stork resulting from implementing Alternative No. 5 would be minimal to moderate. The wood stork could potentially utilize the toe ditch and adjacent wetlands for foraging activities.

Everglade Snail Kite*Rosthrhamus sociabilis plumbeus***No Action Alternative**

Impacts to the snail kite's significant habitat around Lake Okeechobee would be minimal if there should be a major dike failure. The water level must be sufficiently stable to prevent loss of the apple snail through drying out of the surface. Water loss in this area, in the event of a dike failure would not be great enough to seriously affect successful foraging of the highly mobile snail kite.

Alternative No. 5

Impacts to the snail kite resulting from implementing this alternative would be minimal, and restricted to the immediate area of construction. Construction activities would be limited to the

levee itself and the landward side of the levee where this animal doesn't forage extensively. Aside from temporal disturbance caused by the operation of heavy equipment, no impact is expected waterward either. Due to the relatively narrow littoral zone, this area provides minimal snail kite foraging habitat, so impacts are unlikely.

West Indian Manatee

Trichechus manatus

No Action Alternative

Minimal impacts to the manatee are expected to occur in the event of a dike failure. Expected water level reductions would not be great enough to affect the animal's food supplies or exposure to boat-related injury or death.

Alternative No. 5

Impacts to manatee resulting from implementing this alternative would be minimal to none. Construction activities would be limited to the levee itself and the landward side where this animal does not occur.

Okeechobee Gourd

Curbita okeechobeensis *o.*

No Action Alternative

Okeechobee gourd plants that are currently known to exist in the Lake Okeechobee region are limited to the shores of the lake inside of the HHD. Slightly lower lake levels resulting from a major dike failure would have minimal impact to the existing Okeechobee gourd population in this area. However, given its limited range and habitat requirements, any alteration in the hydrology where this plant currently exists could significantly damage the population. Impacts to these gourds would most likely occur with sustained high water events, rather than low.

Alternatives No. 5

Implementation of this alternative would not likely cause impacts to the Okeechobee gourd. The occurrence of this plant along the landward extent of Reach One has not been recorded in recent years.

TABLE 4-1: ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ALTERNATIVES

ENVIRONMENTAL FACTOR	NO ACTION ALT	ALT NO. 5 (PREFERRED ALT)
THREATENED AND ENDANGERED SPECIES	No significant impacts to protected species expected.	No significant impacts to protected species are expected. Memoranda from field analyses document that soils in the lower levee toe are frequently saturated with water and do not provide adequate burrowing habitat for burrowing owls or indigo snakes. Specifics on monitoring of endangered species are detailed under Section 4.10 - Environmental Commitments.
FISH AND WILDLIFE RESOURCES	The implications to fish and wildlife landward of the HHD that may result from dike failure would be limited to the areas of the breach and surrounding habitats. In the area of Reach 1, fish and wildlife habitat is marginal. However, those animals most significantly affected by extensive flooding include those with limited mobility. Amphibians, reptiles, and small mammals would be impacted to a moderate degree.	Cutoff wall may reduce water supply altering wildlife habitat outside the project area. Existing toe ditch will be converted to seepage berm. This activity would eliminate the foraging habitat to wading birds, reptiles, and amphibians, along the toe ditch. Mitigation to replace habitat would be required.

ENVIRONMENTAL FACTOR	NO ACTION ALT	ALT NO. 5 (PREFERRED ALT)
WETLANDS	<p>Selection of the No Action Alternative would lead to minimal wetland impacts if there should be a failure of the HHD system. These impacts would result from increased water levels due to flooding landward of the HHD.</p>	<p>Wetland impacts resulting from implementation of Alternative No. 5 would be moderate. This alternative involves construction of a cutoff wall and seepage berm. The backfilling of the toe ditch and creation of a seepage berm would eliminate the foraging potential along these ditches. Although these areas provide less than optimal habitat, a variety of wading birds, small fishes and invertebrates utilize the ditches. Impacts would require mitigative measures.</p> <p>Approximately 6.7 acres of toe ditch wetlands will be backfilled in the identified priority areas. Using the WRAP summary scores for these wetlands, it was calculated that 3.8 habitat units of mitigation credit are required to backfill the priority areas within the existing ROW. The Corps has 17.1 mitigation bank credits from planting of wetland trees and removal of exotics (<i>Melaleuca</i>), see Section 4.11 Mitigation. Therefore there is no net mitigation requirement for the proposed actions, and a credit of $(17.1 - 3.8) = 13.3$ HU was generated.</p>
WATER QUALITY	<p>The No Action Alternative would have moderate effects on existing water quality due to increased sediments in the surface waters nearest a breach.</p>	<p>Implementation of Alternative No. 5 is expected to have temporary minimal impacts on the water quality along Reach 1. Construction activities could result in increased sediment load in the nearby surface waters of toe swales of the dike. However, silt screens and other erosion and turbidity control devices will be used, as well as the implementation of Best Management Practices (BMPs) to minimize the discharge of water containing excessive turbidity.</p>

ENVIRONMENTAL FACTOR	NO ACTION ALT	ALT NO. 5 (PREFERRED ALT)
HISTORIC PROPERTIES	Potential significant adverse effects in event of dike failure.	SHPO consultation on Reach 1 was initiated August 20, 1999. In the August 7, 2005 response, the SHPO concurred with the Corps' no adverse effect determination on Reach 1. The project will not affect historic properties included in or eligible for inclusion in the National Register of Historic places.
RECREATION	Moderate adverse impacts to recreation resources would be anticipated without major repairs to the dike. Piping and boils would continue, requiring emergency repairs to attempt to keep up with the frequency of breaches in the dike. Areas affected would be closed off during construction for safety purposes, with the inclusion of possibly damaged areas awaiting repairs.	<p>Temporary/short-term impacts to parks, bank fishing, and bike trail, access to select lake side locations as a result of construction activities and/or access of construction site, equipment, and staging areas. Specifically, some effects to the paved Lake Okeechobee Scenic Trail (LOST) atop the HDD may occur during project construction. Construction activities may limit access to certain parts of the trail, and parts or the trail may be removed.</p> <ol style="list-style-type: none"> 1. The Corps will continue, consistent with its authority and funding, through design refinement to seek to reduce and minimize impacts to the Lake Okeechobee Scenic Trail. 2. As necessary for construction of the Herbert Hoover Dike improvements, the Corps will require its construction contractors to maintain a haul road during construction. Said haul road will not be removed but will be left in place after construction. 3. The Corps will explore utilization of Section 111 authority of the 1958 River and Harbor Act, Public Law 85-500, to determine if it is appropriate to pay for the cost to remediate impacts to the Lake Okeechobee Scenic Trail out of project funds.

ENVIRONMENTAL FACTOR	NO ACTION ALT	ALT NO. 5 (PREFERRED ALT)
AESTHETICS	Impacts to aesthetics in the short term are anticipated as piping and boils ruin the integrity of the dike and patches and temporary emergency construction to these areas are ongoing. If these conditions continue without full scale repairs to the dike, aesthetics and safety would be compromised as emergency repairs continue to try and keep up with frequency, construction is continuing, portions of the dike are closed from access, and dust and noise around active construction areas are continual.	Temporary/Short-term impacts to localized areas as a result of construction. Possible vegetation & tree removal.
SOCIO-ECONOMICS	Flooding may result in loss of property and life.	The cutoff wall would affect the upper aquifer by reducing the seepage gradient and may lower the groundwater table near the toe of the dike; however, the impact to adjacent local farms will be insignificant. Possible beneficial impacts may affect the local economy due to construction.
ENERGY REQUIREMENTS AND CONSERVATION	Field office manual labor and construction equipment fuel, to mitigate seepage from piping and boils with sand bagging and other fill material. Filling of sink holes.	Fuel for the construction machinery.
PUBLIC HEALTH AND SAFETY	Decreased factor of safety (F.S.) at critical areas of dike, increased risk of a breach or failure leading to loss of life and property. Risk involved with mitigating seepage from piping and boils with sand bagging and other fill material.	Increased public health and safety, no adverse impacts to public health and safety.

4.3 CUMULATIVE IMPACTS

Cumulative impact is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).

Lake Okeechobee Operations

The repair and rehabilitation of the Reaches together will affect the manageability of Lake Okeechobee. Once the dike is repaired, lake levels can fluctuate closer to historical conditions without jeopardizing the stability of the dike or the persons who live, farm or work adjacent to the dike.

Fish and Wildlife

Fish and wildlife resources, vegetation, and threatened and endangered species are not cumulatively anticipated to change as a result of any alternative.

Water Supply

This project and future work on additional Reaches of the dike are delineated to separate drainage regions. The cumulative impacts of further improvements stand to be positive rather than negative, increasing the stability and safety of the HHD system, and enhancing water resource capabilities to meet all existing needs.

4.4 IRRETRIEVABLE OR IRREVERSIBLE COMMITMENT OF RESOURCES

Significant Federal funding would be irretrievably expended during the implementation of Alternative No. 5. In terms of natural resources, impacts are small and limited to the HHD footprint. The commitment of small, low quality wetland areas landward of the HHD (i.e. toe ditch) is irreversible, but would be offset by mitigation. Long-term displacement of some wading bird habitat is probably not a reversible action but is not significant in quantity compared to higher-quality wetlands surrounding the Lake in its littoral zone, along other canals and in the region.

4.5 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

Unavoidable adverse effects that would result from implementation of this alternative are expected to be minimal to moderate in severity. A summary of unavoidable negative impacts follows.

Topography, Geology and Soils

No significant adverse impacts to the topography, geology, and soils are likely to occur due to implementation of the preferred alternative. Minimal impacts to soils as a result of excavation and filling are expected.

Water Resources

Minimal adverse impacts to the hydrology, water supply, water quality and water management are expected to occur as a result of implementing the preferred alternative.

Vegetation and Cover Types

No significant adverse impacts to the vegetation and cover types are likely to occur due to implementation of the preferred alternative. Minimal short-term impacts to vegetation as a result of construction and minor excavation for this alternative are expected. Minimal effects would occur only within the HHD footprint.

Wetlands

Some unavoidable permanent and direct adverse impacts to wetlands are likely to occur due to implementation of the preferred alternative. Excavation and fill of low quality wetlands will be required along the landward toe of the dike in order to accommodate construction of the proposed toe ditch repairs and seepage berm. Negative consequences should be minimal to moderate and have previously been compensated for by creation of wetland habitat through off-site mitigation (see Section 4.11 – Mitigation).

Fish and Wildlife

Non-significant adverse effects to fish and wildlife are likely to occur due to implementation of the preferred alternative. The foraging habitat for wading birds in the landward toe ditches would be altered through implementation of this alternative. Additionally, existing reptiles, amphibians, and fishes utilizing these ditches would be lost during this activity. This is a moderate loss, but considering the low quality of these ditches as foraging habitat, and the availability of an extensive network of comparable ditches in the area, not significant in extent.

Threatened and Endangered Species

Minor unavoidable adverse impacts to threatened and endangered species are likely to occur due to implementation of the preferred alternative. The foraging habitat for listed wading birds (e.g. wood storks, tri-colored heron, little blue heron) in the landward remnant wetlands would be excavated and filled through implementation of this alternative requiring these animals to forage elsewhere. The severity of this loss is minimal to moderate considering the low quality of these ditches as foraging habitat, and the availability of an extensive network of comparable ditches, as well as Lake Okeechobee littoral zone, in the area.

Determined that the project may affect but is not likely to adversely affect the wood stork, bald eagle, caracara or indigo snake.

Noise

Minor localized noise related impacts during construction operations are expected to occur due to implementation of the preferred alternative.

Air Quality

Minor and localized air quality impacts during construction operations are expected to occur due to implementation of the preferred alternative.

Land Use

Some unavoidable adverse impacts to existing land use elements are likely to occur due to implementation of the preferred alternative. Alteration of local hydrology could affect local agriculturists if the availability of irrigation water is affected. Temporary relocation of electrical transmission lines may be required to conduct construction activities associated with this alternative. Portions of priority areas P-1 and P-6 and the seepage berm will require more land area than the current HHD easement provides, unavoidable impacts to homes, businesses, roads, and railroads will be address in the supplemental EIS for alternatives not within the existing ROW for Reaches 1-3.

Aesthetic Resources

Limited, short-term adverse impacts associated with construction activities would be imposed on aesthetic resources within the project area. These impacts may be mitigated by implementation of a well planned aesthetic measures plan which would account for unavoidable tree and native vegetation removal and dust from earth moving equipment among others. These impacts would be expected to be temporarily adverse at or near to parks, natural areas, residential or urban areas.

Recreation Resources

Temporary/short-term impacts to parks, bank fishing, and bike trail, access to select lake side locations as a result of construction activities and/or access of construction site, equipment, and staging areas. Specifically, some effects to the paved Lake Okeechobee Scenic Trail (LOST) atop the HHD may occur during project construction. Construction activities may limit access to certain parts of the trail, and parts or the trail may be removed.

1. The Corps will continue, consistent with its authority and funding, through design refinement to seek to reduce and minimize impacts to the Lake Okeechobee Scenic Trail.
2. As necessary for construction of the Herbert Hoover Dike improvements, the Corps will require its construction contractors to maintain a haul road during construction. Said haul road will not be removed but will be left in place after construction.
3. The Corps will explore utilization of Section 111 authority of the 1958 River and Harbor Act, Public Law 85-500, to determine if it is appropriate to pay for the cost to remediate impacts to the Lake Okeechobee Scenic Trail out of project funds.

4.6 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

The adverse effects (short-term uses) associated with implementing the selected alternative action would not be significant with the exception of wetlands, recreational and aesthetic impacts during construction. Adverse effects on wetlands have been fully mitigated by action described in **Section 4.11 Mitigation**.

The environmental impacts of this effort are insignificant in terms of the human environment, and the costs to the natural environment. The purpose of the repair is long-term public safety resulting in a positive net benefit to human and environmental quality both locally and regionally from implementation of Alternative No. 5.

4.7 INDIRECT EFFECTS

Indirect effects may be caused by implementation of the preferred alternative. Local residents and farmers adjacent to Reach 1 may experience water supply and drainage impacts. The Corps is currently coordinating with the surrounding drainage districts and SFWMD to determine how the toe ditch is operated and anticipate any adverse effects that may result from the backfilling of the toe ditch.

4.8 COMPATIBILITY WITH FEDERAL, STATE, AND LOCAL OBJECTIVES

The objectives for this project are enhanced local flood control and public safety for property owners and residents close to the referenced Reaches.

4.9 CONFLICTS AND CONTROVERSY

There are no foreseen conflicts or controversies at this time.

4.10 ENVIRONMENTAL COMMITMENTS

The U.S. Army Corps of Engineers and contractors commit to avoiding, minimizing or mitigating for adverse effects during construction activities by including the following commitments in the contract specifications:

(1) The Corps will conduct a pre-construction survey to determine actual locations of bald eagle nests within the immediate vicinity of Reach 1 prior to issuance of any construction contracts. Results will be coordinated with the USFWS, Vero Beach office.

(2) Standard protection measures (standard environmental specifications to be followed by construction personnel) regarding the Eastern indigo snake will be followed during construction. These specifications have been developed for all projects by the Corps in collaboration with the US Fish and Wildlife Service, and include hiring a snake monitor during construction, removal of any animals accidentally discovered and other measures to protect individual snakes.

(3) The Corps will conduct a survey for burrowing owls commensurate with that for bald eagle nests prior to issuance of any construction permits. The Corps will consult with the Florida Fish and Wildlife Conservation Commission (FFWCC) regarding adopting standardized protection measures should any owls be identified within Reach 1. Results will be coordinated with the USFWS and FFWCC.

If burrowing owls are found to be present in the project area, impacts will be minimized by altering construction schedules to avoid the nesting season and/or burrows will be cordoned off to avoid their direct destruction.

(4) Continued recreation planning will be performed during detailed project engineering and design. In addition, the appropriate FDEP representative will be contacted to insure collaboration on design features with the Scenic Trail Master Plan Coordination and the Lake Okeechobee Scenic Trail. An inventory of park amenities and utilities prior to construction would facilitate a rapid return to pre-construction state for those areas so impacted.

During construction, access to certain parts of the Lake Okeechobee Scenic Trail (LOST) would be restricted, and parts of the trail would be removed.

- The Corps will continue, consistent with its authority and funding, through design refinement to seek to reduce and minimize impacts to the Lake Okeechobee Scenic Trail.
- As necessary for construction of the Herbert Hoover Dike improvements, the Corps will require its construction contractors to maintain a haul road during construction. Said haul road will not be removed but will be left in place after construction.
- The Corps will explore utilization of Section 111 authority of the 1958 River and Harbor Act, Public Law 85-500, to determine if it is appropriate to pay for the cost to remediate impacts to the Lake Okeechobee Scenic Trail out of project funds.

(5) Construction crews will be made aware of the potential for the presence of the Okeechobee gourd. If the gourd is found, the Service will be notified.

(6) The project will require a water quality certification under Chapter 373, F.S. and Sections 402 and 404 of the Clean Water Act. A permit application is underway.

(7) Turbidity screening and diversion will be used to control impacts to the drainage ditches and connected canals. Runoff from the construction site or from storms will be controlled, retarded, and diverted to protected drainage courses by means of diversion ditches, benches, and by any measures required by area wide plans approved under paragraph 208 of the Clean Water Act. Temporary and permanent erosion and sedimentation control features or screening will be installed. Temporary velocity dissipation devices will be placed along drainage courses so as to provide for non-erosive flows. Temporary erosion and sediment control measures such as berms, dikes, drains, sediment traps, sedimentation basins, grassing, mulching, baled hay or straw, and silt fences will be maintained until permanent drainage and erosion control facilities are completed and operative. For silt fences, the filter fabric is to be of nylon, polyester, propylene, or ethylene yarn of at least 50 lb/in strength and able to withstand a flow rate of at least 0.3 gal/ft sq/minute. It also would contain ultraviolet ray inhibitors and stabilizers and be a minimum of 36 inches in width.

In addition, during construction, the Corps or Contractor will be responsible to keep construction activities, including refueling and maintenance sites, under surveillance, management, and control to avoid pollution of surface, ground waters, and wetlands. All operations will be controlled to minimize turbidity and would conform to all water quality standards as prescribed by Chapter 62-302, State of Florida, Department of Environmental Protection.

4.11 MITIGATION

The preferred alternative is similar to the alternative recommended in the draft EIS of July 1999. The design called for a seepage berm which would have required backfilling the toe ditch wetlands. As part of their concurrence with the draft EIS, the U.S. Fish and Wildlife Service (USFWS) recommended in the Coordination Act Report (CAR) that the Corps provide mitigation for the backfilling of Reach 1 wetlands by restoration of degraded wetlands. The Corps concurred with the mitigation recommendations and carried 57 acres of Melaleuca removal adjacent to Reach 2 (near the Alvin Ward Boat Ramp) and maintained this area. The Uniform Mitigation Assessment Method (UMAM) was used to assess the value of habitat created. The UMAM scored the habitat value as equivalent to 17.1 mitigation credits. These analyses can be referenced in Appendix C of this EA.

This previously created mitigation can be used towards the proposed priority toe ditch fills. Biologists from the Corps and the USFWS prepared a Wetlands Rapid Assessment Procedure (WRAP) field analysis of the existing wetland function in the Reach 1 to estimate the required acres of wetland mitigation needed to compensate for filling the toe ditch. The total mitigation required for priority fixes within the existing ROW is estimated at 3.8 habitat units (credits). Details on how this was calculated are in Appendix C (Table C-1). Table 4-3 displays the available mitigation credits after deducting the mitigation required for backfilling the priority toe ditches within the existing ROW from the mitigation credits created.

TABLE 4-2: MITIGATION CREDITS AVAILABLE

Total Mitigation Credits Created	Mitigation Required for Priority Toe Ditch Backfilling	Mitigation Credits Available
17.1	3.8	13.3

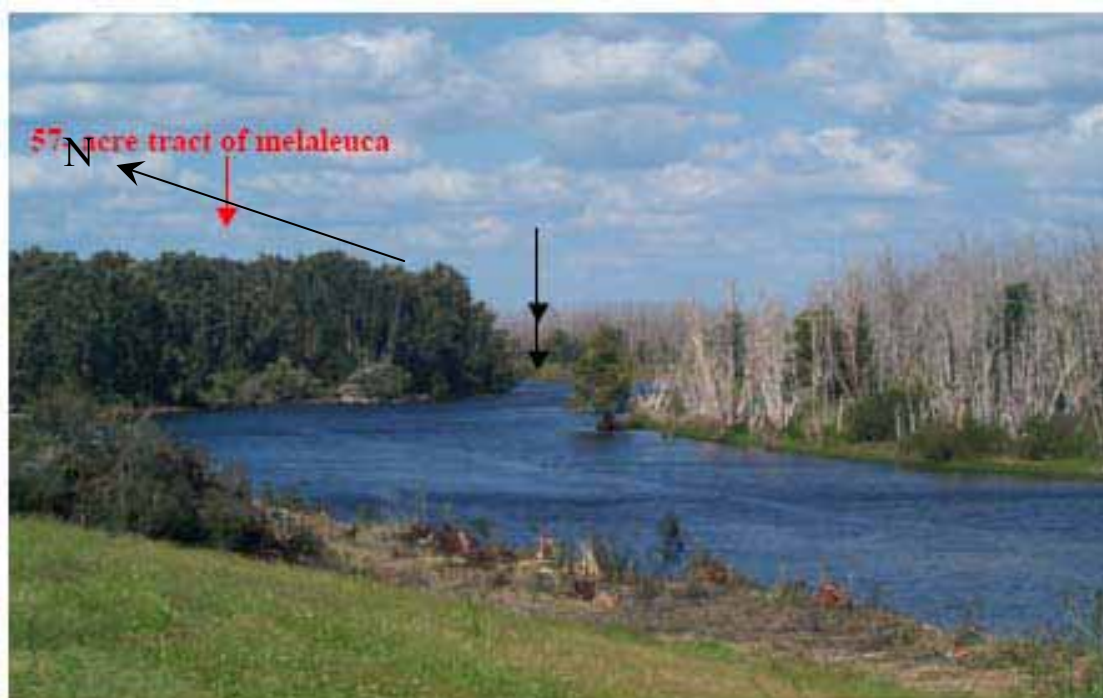


FIGURE 4-1: PRE-MITIGATION CONDITIONS (NOTE THE EXTENT OF MELALEUCA)



FIGURE 4-2: PRE-MITIGATION CONDITIONS (CLOSE-UP)



FIGURE 4-3: MELALEUCA REMOVAL



FIGURE 4-4: MELALEUCA REMOVAL



FIGURE 4-5: POST MITIGATION SITE



FIGURE 4-6: POST MITIGATION SITE

4.12 COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

4.12.1 National Environmental Policy Act of 1969

Environmental information on the project has been compiled and this Environmental Assessment was prepared in compliance with the National Environmental Policy Act.

4.12.2 Endangered Species Act of 1973

Consultation was initiated by email with USFWS on 27 September 2006, and will be completed upon coordination of the present Environmental Assessment.

4.12.3 Fish and Wildlife Coordination Act of 1958

This project has been coordinated with the U.S. Fish and Wildlife Service (USFWS).

4.12.4 National Historic Preservation Act of 1966 (Inter Alia)

PL 89-665, the Archeology and Historic Preservation Act (PL 93-291), and executive order (11593) Archival research, and consultation with the Florida State Historic Preservation Officer (SHPO), has been conducted in accordance with the National Historic Preservation Act, as amended; the Archeological and Historic Preservation Act, as amended and Executive Order 11593. SHPO consultation on Reach 1 was initiated August 20, 1999. In April 7 2005, response, the SHPO concurred with the Corps' no adverse effect determination on Reach 1. The project will not affect historic properties included in or eligible for inclusion in the National Register of Historic places. Consultation for Reaches 2 and 3 is ongoing. The project is in compliance with each of these Federal laws.

4.12.5 Clean Water Act of 1972

Under the Clean Water Act (CWA) the Corps has applied for a State Water Quality Permit (Section 404) as required. We expect to receive the DEP permit [#number] prior to construction start-up, and will delay construction until it is received. We will comply with all applicable Florida water quality standards. A Section 404(b) evaluation is included in this report as Appendix A.

4.12.6 Clean Air Act of 1972

This project has been coordinated with the Florida Department of Environmental Protection (FDEP), Air Quality Division.

No air quality permits would be required for this project. Per the EPA list, there are no air sheds Florida that require source control or monitoring. Coordination with the EPA will be ongoing as detailed design information becomes available. This project is in full compliance with the Act.

4.12.7 Coastal Zone Management Act of 1972

A federal consistency determination in accordance with 15 CFR 930 Subpart C is included in the FEIS report (dated July 2005) as Annex D. State consistency review was performed during the coordination of the draft and final EIS. The Corps has determined that the proposed project is consistent with the Florida Coastal Zone Management Program. Continued concurrence is based on adequate resolution of issues identified by state agencies, specifically FDOT and FDEP coordination of impacts to the Lake Okeechobee Scenic Trail (LOST) and repairs, as well as activities involving FDOT right-of-ways and structures (e.g. US 27, Priority Area No. 3). The Corps recognizes that a traffic control plan will need to be developed prior to work beginning near FDOT right-of-ways and structures.

4.12.8 Farmland Protection Policy Act of 1981

No prime or unique farmland would be impacted by implementation of this project. This act is not applicable.

4.12.9 Wild and Scenic River Act of 1968

No designated Wild and Scenic river reaches would be affected by project related activities. This act is not applicable.

4.12.10 Estuary Protection Act of 1968

No designated estuary would be affected by project activities. This act is not applicable.

4.12.11 Federal Water Project Recreation Act

The effects of the proposed action on outdoor recreation have been considered and are presented in the Supplemental and Final EIS. Short-term impacts to the Lake Okeechobee Scenic Trail located on top of the dike will require close coordination with FDOT and FDEP in order to return the trail to as-built conditions and limit trail closure time. Continued recreation planning will be performed during detailed project engineering and design. The project is in full compliance.

4.12.12 Migratory Bird Treaty Act and Migratory Bird Conservation Act

No migratory birds would be affected by project activities. The project is in compliance with these acts.

4.12.13 E.O. 11990, Protection of Wetlands

The recommended plan entails permanent filling of the landward toe ditch, a man-made, yet functional wetland of moderate to poor functional value. A drainage swale will be constructed along the landward toe of the berm to collect and convey surface drainage from each side of the seepage berm. In anticipation of the wetlands toe ditch fill as part of the preferred Alternative No. 3 of the draft 1999 EIS, mitigation was initiated by removing 57 acres of Melaleuca at a site

near Alvin Ward Boat Ramp, the UMAM assessment equated this mitigation to 17.1 habitat units of mitigation credit that can be applied to this project. The total mitigation required for the toe ditch priority area backfills is estimated at 3.8 habitat units. Therefore, this project is in compliance with the goals of this Executive Order.

4.12.14 E.O. 11988, Flood Plain Management

The study is in full compliance. While the considered alternative has no impact on avoidance of development in the flood plain, the recommended plan will directly support a reduction in hazards and risks associated with floods and will minimize the impact of floods on human safety, health and welfare. The recommended plan will have no impact on the restoration and preservation of the natural and beneficial values of the base flood plain.

4.12.15 E.O. 12898, Environmental Justice

Executive Order 12898 requires the Federal government to review the effects of their programs and actions on minorities and low income communities. The study area is known to contain a significant percentage of low income and minority individuals. The preferred alternative that was formulated for the Herbert Hoover Dike would help to ensure the safety of those communities within the study area (e.g. Belle Glade and Pahokee) as well as residents living within the area anticipated to be impacted in the event of a project failure. In addition to ensuring the safety and well being of residents and their property, implementation of the recommended plan may have a significant beneficial effect on local communities through job creation, increased sale of construction material and other goods necessary to sustain a large construction force for the duration of the project.

4.12.16 E.O. 13112, INVASIVE SPECIES

Exotic and invasive plant species lost within drainage swales, connecting canals, wetlands, and some uplands within the project area. However, the project will not contribute to nutrient loading, or otherwise foster the spread of invasive species. In addition, some removal of invasive species will be necessary, and maintained, within the toe ditch swale. Exotic wildlife species are not anticipated to be affected. This project is in full compliance with the Act.

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5.0 LIST OF PREPARERS

5.1 PREPARERS

The following individuals listed were responsible for contributing to the preparation, review and technical editing of the Draft EA:

TABLE 5-1: LIST OF EA PREPARERS

Name	Affiliation	Discipline/Expertise	Role in Preparing Document
Tien Ho	EPJV, USACE Contractor	Biological Engineer	Preparation of draft EA
Mark D. Shafer	USACE	Environmental Engineer	Water Quality, HTRW, and Permit acquisition
Jacob Davis	USACE	Geotechnical Engineer	Preparation of the MRR

5.2 REVIEWERS

TABLE 5-2: LIST OF EA REVIEWERS

Name	Affiliation	Discipline/Expertise	Role in Preparing Document
Nancy Allen	USACE	Biologist	NEPA Review
Brooks Moore	USACE	Office of Counsel, Attorney	Legal Review
Pauline Smith	USACE	Project Manager	Review of Project Features
Barbara Cintron	USACE	Chief of Environmental Branch, South Florida Section	NEPA Review
John Bretz	EPJV, USACE Contractor	Project Manager	Consistency Review

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6.0 PUBLIC INVOLVEMENT

6.1 SCOPING AND DRAFT EA

Following the completion of the Independent Technical Review (ITR) a news release describing the design recommendations for the rehabilitation of HHD was released on October 5, 2006 to keep the public informed of the decisions resulting from the workshop.

The draft EA and proposed Finding of No Significant Impact (FONSI) were made available to the public by notice of availability dated 11 December 2006.

6.2 AGENCY COORDINATION

The draft EA was provided to all supporting agencies for review. Any comments received will be addressed in the final EA. Pertinent correspondence with agencies is available in Appendix D of this EA.

6.3 LIST OF RECIPIENTS

Table 6-1 lists those public and agency who received a hard copy of the draft EA. Table 6-2 lists recipients who received CD copy. Table 6-3 lists recipients of a notice of availability (NOA) letter.

The draft EA was also posted on the Corps environmental planning website at:

<http://planning.saj.usace.army.mil/pdfs/Reach1EA.pdf>

TABLE 6-1: LIST OF HARD COPY RECIPIENTS

AGENCY	FIRST	LAST	COMPANY / DIVISION
Federal			National Marine Fisheries Service/Habitat Cons Div
Federal			U.S. Department of HUD
Federal			U.S. Army Corps of Engineers
Federal	Barry	Rosen	FISC
Federal	Jonathon	Deason	Department of the Interior MS 2340
Federal	David	Bernhart	NMFS
Federal	George	Hadley	Federal Highway Administration
Federal	Neal	McAlily	U.S. Department of Justice
State			Environmental Office (MS-37) Florida DOT
State			Okeechobee Field Station / SFWMD
State	Don	Nuelle	SFWMD
State			FL Department of Environmental Protection
State	Sally	Bradshaw	Governor's Office
State	Ernie	Barnett	FDEP - Ecosystem Planning
State			Division of Historic Resources
State	Kenneth	Haddad	FL Fish & Wildlife Conservation Commission

State			Legislative Library
State	Jeff	Schardt	FL Department of Environmental Protection - Bureau of Invasive Plant Management
State	Colleen	Castille	FL Department of Environmental Protection
County			Hendry County Administration
County			Okeechobee County Administration
County	Houston	Tate	Office of the City Manager
County	Steve	Wilson	City of Belle Glade
County			St. Lucie River Initiative
County			Osceola County Administration
County			St. Lucie County Administration
County			Glades City Board of County Commissioners
County			Glades County Administration
Association			Caloosahatchee River Citizens Association
Association			Friends of Lake Okeechobee
Association			Florida Wildlife Federation
Association			Sierra Club, Loxahatchee
Tribe	Steve	Terry	Miccosukee Tribe of Indians of Florida
Tribe	Terrance	Salt	South Florida Restoration Task Force
Tribe	Mitchell	Cypress	Seminole Tribe of Florida
Tribe	Craig	Tepper	Seminole Tribe of Florida
Tribe	Billy	Cypress	Miccosukee Tribe of Indians of Florida
Tribe	William	Steele	Seminole Tribe of Florida
Agricultural	Barbara	Miedema	Sugar Cane Growers Cooperative
Other			Okeechobee Board of County Commissioners
Other	Joseph	Spratt	Hendry County Board of County Commissioners
Other	Donald	Stilwell	Lee County
Other	Kevin	Henderson	St. Lucie River Initiative
Libraries			Clewiston Public Library
Libraries			Martin County Blake Library
Libraries			Okeechobee County Public Library
Libraries			Palm Beach County Library
Libraries	Doris	Cutshall	Barron Library
Federal			Department of Energy
Federal	Ron	Miedema	U.S. EPA
Federal			U.S. Fish and Wildlife Service
Federal			Everglades National Park
Federal			National Park Service
Federal			U.S. EPA, Region 4
Federal			U.S. Army Corps of Engineers, SAD, Planning
Federal	Paul	Souza	U.S. Fish and Wildlife Service
Federal			U.S. EPA
Federal			U.S. Department of Commerce/NOAA
State			SFWMD
Federal	Gary	Hardesty	U.S.A.C.E., Program Mgmt. Div./CECW-HQ02
Federal	Kenneth	Harvan	U.S. DOI Office of Environmental Policy and Compliance
State			Florida State Clearinghouse / FDEP

TABLE 6-2: LIST OF CD RECIPIENTS

AGENCY	FIRST	LAST	COMPANY / DIVISION
Federal			Bureau of Indian Affairs
Federal			FEMA Insurance & Mitigation Division
Federal	Richard	Harvey	U.S. EPA, Region 4
Federal	Mark	Bradford	Bureau of Indian Affairs
Federal			Federal Emergency Mananagement Admin
Federal			7th Coast Guard District
Federal			U.S. Department of Agriculture
Federal			U.S. Geological Survey, WRD
Federal	Audra	Livergood	NOAA/National Marine Fisheries Service
Federal			Federal Maritime Commission
Federal	David	Rackley	NOAA/National Marine Fisheries Service
Federal	William	Leary	Council on Environmental Quality
Federal			Advisory Council on Historic Preservation
Federal	Ted	Center	U.S. Department of Agriculture, Aquatic Plant Lab
Federal			U.S. Forest Service - USDA
State			FL Dept of Agriculture & Consumer Services
State			Florida Power and Light
State			House Environmental Protection Committee
State	Brian	Barnett	Office of Environmental Service - FL Fish & Wildlife Conservation Commission
State			Everglades Protection & Restoration Program - FL Fish & Wildlife Conservation Commission
State			Government Responsibility Council
State			Intergovernmental Affairs Policy Unit
Agricultural	Tom	Jones	South Florida Agricultural Council
Agricultural	Ken	Langeland	University of Florida Institute of Food & Agr. Sciences / Center for Aquatic Plants
Agricultural	Steve	Baumgartner	Chamber of Commerce
Agricultural	Robert	Daniels	South FL Regional Planning Council
Agricultural	Charles	Schoech	Highlands Glades Drainage District
Agricultural	John W.	Dunkelman	Florida Sugar Cane League, Inc.
Agricultural			Everglades Coordinating Council
Agricultural	John Ed	Burdeshaw	Okeechobee Chamber of Commerce
Agricultural	Jeff	Krauskopf	Martin Board of County Commissioners
Agricultural	Patrick	Gleason	Camp Dreser & McKee, Inc.
Marina & Fish Camp	David	Sutton	University of Florida IFAS Research Center
Other	Phillip	Parsons	Landers & Parsons
Other			SW Florida Watershed Council
Other	Susan	Brookman	South FL Watershed Council Inc.
Other	Thomas	Macvicar	Macvicar, Frederico & Lamb, Inc.
Other	Beverly	Jones	St. Lucie Initiative
Other	Patrick J.	Gleason	Camp Dreser & McKee, Inc.
Libraries			Pahokee Water Control District

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TABLE 6-3: LIST OF NOA RECIPIENTS

AGENCY	FIRST	LAST	COMPANY / DIVISION
Federal			U.S. House of Representatives
Federal	Alcee	Hastings	U.S. House of Representatives
Federal	Bill	Nelson	U.S. Senate
Federal	Mel	Martinez	U.S. Senate
County			Economic Council of Okeechobee County, Inc.
County			Polk County Administration
County			Economic Council, Palm Beach County
County			City of Pahokee
County	Kenneth	Schenck	City of Pahokee
County			Miami-Dade County / Office of the County Manager
County			Martin County Administration
County			Palm Beach County Administration
County			Polk County Board of County Commissioners
County	J.P.	Sasser	City of Pahokee
Association			The Nature Conservancy
Association			Lake Region Audubon Society
Association			National Parks & Conservation Association
Association			Tropical Audubon Society
Association			Trust for Public Lands
Association			The Florida Biodiversity Project
Association			Friends of the Everglades
Association	Ruth	Clark	League of Women Voters, Broward
Association			National Resources Defense Council
Association			Audubon Society of the Everglades
Association			National Audubon Society
Association	Andrew	Schock	National Wildlife Federation
Agricultural	Dave	Quiring	Berry Grove Corporation
Agricultural			U.S. Sugar Corporation
Agricultural	Wayne	Nelson	
Agricultural	M. Kent	Brown	McArthur Farms Inc.
Agricultural	Lace	Vitunac	Conservation Alliance of St. Lucie County
Agricultural	Art	Darling	Dairy Farmers Inc.
Agricultural			Florida Citrus Mutual
Agricultural	Vee	Platt	Frierson Farm
Agricultural	Bryan	Beer	Gutwein Groves, Inc.
Agricultural			Atlanta Sugar Association, Inc.
Agricultural	Nathaniel	Reed	
Agricultural	Louis	Larson, Sr.	Larson Dairy, Inc.
Agricultural	Joe	Collins	Lykes Bros. Inc.
Agricultural	Bubba	Wade	
Agricultural	Ricaardo	Lima	Okeelanta Corporation
Agricultural	Charles	Harvey	Okeechobee County Board of County Commissioners
Marina & Fish Camp			Buckhead Ridge Marina
Marina & Fish Camp			Fast Break
Marina & Fish Camp			Roland and Marian Martin's Marina & Resort

Marina & Fish Camp			Taylor Creek Lodge
Marina & Fish Camp	Red	Altman	
Marina & Fish Camp	Ron	Ramsey	
Marina & Fish Camp	Ron	Hamel	Gulf Citrus Growers Association
Marina & Fish Camp			Twin Palm Resort
Marina & Fish Camp			Angler's Guide Service
Marina & Fish Camp			Little Big Man's
Marina & Fish Camp			Fisherman's Village
Marina & Fish Camp			Jolly Roger Marina
Marina & Fish Camp			Sportsman's Village Marina
Marina & Fish Camp	Warren	Brown	
Marina & Fish Camp			Okee Tantie Bait & Tackle
Marina & Fish Camp			J & S Fish Camp
Marina & Fish Camp			Alvin's Bait & Tackle
Marina & Fish Camp			Fisherman's Heaven - Custom Lures By Sam
Marina & Fish Camp	Greg	Close	Caloosa Lodge
Marina & Fish Camp			Garrard's Bait & Tackle
Marina & Fish Camp	Carroll & Louise	Head	
Other	Gail	Byrd	Okeechobee Waterway Association
Other	Lesly	Smith	Town of Palm Beach
Other			Palm Beach Board of County Commissioners
Other	Wayne	Jenkins	Everglades Coordinating Council
Other			
Other	Donald	Stilwell	Lee County
Other			Central Florida Regional Planning Council
Other	Bonnie	Dearborn	Treasure Coast Regional Planning Council
Other			Hendry County Board of County Commissioners
Other			Friends of Lake Okeechobee
Other			Water Utilities Department/Palm Beach County
Other	Robert M.	Norton	
Other	Brian	Oulette	
Other			South FL Regional Planning Council
Other			Martin County Administrative Office Attn: BCC
Other	Vicki	Smith	Okeechobee BCC
Other	Cathy	Hilliard	Ladies of the Lake, U.S.A.
Libraries			Office of the Director Environmental Health Center for
Libraries	Ardis	Hammock	
Libraries	Kevin	Stinnette	Treasure Coast Environmental Defense Fund

6.4 COMMENTS RECEIVED AND RESPONSE

Table 6-4 summarizes the public / agency comments received and the USACE response. All public / agency correspondence is included in its entirety in Appendix D – Pertinent Correspondence.

TABLE 6-4: COMMENT RESPONSE MATRIX

Letter	Public / Agency Comment	USACE Response
FDOT – 1	While the overall map for the priority areas (Figure 2-9) does label the adjoining highway system, the individual maps (Figures 2-10 through 2-18) do not which causes some concern. Please provide this necessary level of detail on the individual priority site maps for both the adjoining roadways and railroad facilities that may be impacted by the proposed work.	The EA has been edited to reflect need for coordination at Priority Area 3 due to Highway 27 right-of-way. However, during this phase of the project we will not extend the berm onto properties that are not already part of the Herbert Hoover Dike right-of-way. That action will occur at a later phase when required real estate interests have been acquired. No roadways will be impacted at this time. The requested level of detail will be incorporated into future documents as needed.
FDOT – 2	<p>There was no mention in the EA document of potential impact to the adjoining rail and roadway infrastructure from the proposed work. This potential impact to public infrastructure needs to be addressed in this NEPA document as well as any type of proposed mitigation.</p> <p>In specific to priority area #3, the US 27 roadway is immediately adjacent to the site, and the associated roadway drainage ditch will in fact be impacted by the proposed work. FDOT is working with ACOE to ensure this impact will not be a negative one, but this impact needs to be documented in the report as well as the steps taken to mitigate all concerns. As mentioned in the discussions between FDOT and ACOE, some type of permit or authorization will be needed for the work in the US 27 roadway right-of-way associated with priority site #3.</p> <p>We need to make sure there is an approved Traffic Control Plan for the work that takes into account the high speed of this adjacent roadway while providing sufficient protection for the traveling public and Dike Construction workers and associated equipment.</p>	Concur that ongoing coordination between the Corps and FDOT for priority Area 3 should be mentioned. The EA has been revised to reflect ongoing coordination and need for a Traffic Control Plan for work on Highway 27 ROW in the future.

FDOT – 3	<p>As an overall concern, FDOT provided funding for the construction and paving of portions of the Lake Okeechobee Scenic Trail (LOST) located on top of the Herbert Hoover Dike. As part of the dike rehabilitation, any associated impacts to the LOST should be fully mitigated by any necessary reconstruction to restore the trail to its current pre-rehabilitation condition. Impacts to the LOST trail surface, pedestrian bridges, berms, signage, mile markers or other features installed by the State of Florida must be replaced to like or higher standards by the ACOE. Temporary trail closure during the rehabilitation should be accompanied with appropriate signing and public notices. Again, these potential impacts and mitigation needs to be documented in the NEPA document.</p>	<ol style="list-style-type: none"> 1. The Corps will continue, consistent with its authority and funding, through design refinement to seek to reduce and minimize impacts to the Lake Okeechobee Scenic Trail. 2. As necessary for construction of the Herbert Hoover Dike improvements, the Corps will require its construction contractors to maintain a haul road during construction. Said haul road will not be removed but will be left in place after construction. 3. The Corps will explore utilization of Section 111 authority of the 1958 River and Harbor Act, Public Law 85-500, to determine if it is appropriate to pay for the cost to remediate impacts to the Lake Okeechobee Scenic Trail out of project funds.
FDEP – 1	<p>In Section 4 Page 33 under “RECREATION” the plan identifies the contractor as required to replace trail elements disturbed, if any, during cut-off wall placement. In Section 4 Page 37 under “<u>Recreation Resources</u>” the plan states that an inventory of all park amenities and utilities prior to construction will facilitate a rapid return to pre-construction state for those areas so impacted. However, this section goes on to state that the Corps does not have authority for this project to make repairs to such areas as Lake Okeechobee Scenic Trail (LOST) that would be removed or impacted with construction. This last statement conflicts with the two previous statements listed above.</p>	<p>Concur. The Final EA will be updated so that language regarding the LOST is consistent throughout the entire document.</p>
FDEP – 2	<p>The original lease from the State of Florida to the Corps for state lands supporting the levee requires the Corps to allow recreation along the Herbert Hoover Dike. Disturbing and not repairing state owned facilities on Board of Trustees owned land would be counter to the Corps lease requirement.</p>	<p>Please refer to our response to FDOT Comment 3, above.</p>

FDEP – 3	Not restoring the LOST to a pre-construction condition will be an adverse impact that needs to be addressed in the final environmental document. There will be significant social and community impacts if the LOST is not repaired or replaced during construction. We request the Corps initiate discussions with the Department as soon as possible to determine a remedy for this situation.	Please refer to our response to FDOT Comment 3, above.
FDEP – 4	The LOST was awarded the Federal designation of Florida National Scenic Trail. Therefore, temporary trail closure during levee rehabilitation must be accompanied with on-site signing and public notices.	Concur. The USACE will follow guidelines that apply to a Florida National Scenic Trail, including proper on-site signing and public notices.
FDEP – 5	If an alternative is chosen that affects lands outside of the existing dike footprint, we suggest that the Corps coordinate with our Division of State Lands concerning lands that may be owned by the state. Coordination with our Southeast District Office in West Palm Beach is recommended regarding any state permitting requirements for rehabilitation activities.	Concur. The Corps will continue to openly communicate and cooperate with DEP.
FDEP – 6	Drinking water intake pipes are located throughout the project area. It is imperative that the contractor be aware of the exact locations and diligently avoids impacting the pipes (i.e. damaging the pipes, creating turbid water near the intake, etc.)	Noted.
FDEP – 7	The reference to page 24 in subparagraph c, page vi should be changed to page 40 for the discussion of the Corps mitigation credits.	Concur. This change has been incorporated.
EPA – 1	Overall, EPA supports the proposed project to rehabilitate portions of the HHD to maintain its integrity.	Thank you.
EPA – 2	The cumulative impacts of various HHD projects should be collectively disclosed in the cumulative impacts section of each document. Pg 35 of the draft EA only addresses the cumulative impacts of other projects within the area; the final EA should address the various proposed and reasonably foreseeable HHD rehabilitation projects as discussed above.	Do not concur for this first EA. The 2005 EIS discusses cumulative impacts of overall Reach 1 proposed projects. This EA mentions, but does not evaluate, the impact of future expansion of the seepage berm because only general information is available on the width of that proposed berm in different Reach 1 segments. A future EIS supplement will discuss details, direct, indirect and cumulative impacts, but would not affect the initial fill within the right of way.

EPA – 3	Groundwater (pg. 5 & 9) – Full information should be provided on whether the proposed project also will affect groundwater including modeling data to show any potential effects.	The impact of the cutoff wall on groundwater on adjacent sites will depend on the depth of the wall. This depth will vary by individual reach and segment. Insufficient information is available currently to discuss impacts, though. After detailed studies are finished a Supplement to the Reach 1 EIS will discuss cutoff wall and ROW expansion details.
EPA - 4	Wetlands/Mitigation (pg 27) – “applying the results of the WRAP analysis, the wetlands tree planting produced 1 credit habitat units of mitigation credit would be necessary for the priority toe ditch repairs in Reaches 1-3’. This statement is unclear from the editorial and technical perspective.	Concur. This was an editorial error. The statement has been removed from the document.
EPA – 5	Wetlands (pg 32,36,38) – EPA requests that a joint federal agency review be conducted of the mitigation areas to determine if the work completed is appropriate to offset Reach 1 impacts. Restoration activities conducted by the COE should be reviewed under the Joint State/Federal Mitigation Review Team Process for Florida. This is to also insure the restoration activities meet the fundamental requirements of mitigation banks in the state of Florida.	Concur. Review was completed by USFWS, FLDEP and USACE on January 11, 2007.
EPA – 6	Mitigation (pg 40) – In order to determine the amount of mitigation necessary to offset project impacts, the functional assessment conducted needs to be either UMAM or WRAP for both the impact and the mitigation sites. The two methods are not interchangeable and do not measure the same wetland function.	FLDEP has determined the necessary compensation acres needed for work on this project. They are satisfied with the UMAM calculations.
EPA – 7	In the final EA, please append the WRAP documents to support the 3.8 acres of mitigation necessary to offset Reach 1 impacts. The WRAP summary score should be multiplied by the acres of impact to derive a wetland habitat debit score, rather than the amount of acres necessary to offset project impacts.	Concur. Information has been updated.
EPA – 8	We request that a detailed mitigation plan for the tree planting and exotic removal activities be included in the final EA. Include success criteria, tree planting plan, monitoring report schedule, exotic removal and follow-up plan.	A monitoring / compensation plan will be developed for the final SEIS for Reaches 2 and 3 but not for this EA. FLDEP permit outlines the criteria necessary to meet compensation guidelines.

EPA – 9	UMAM descriptions need to be added to the Landscape Support, Water Environment, and Community Structure. Documentation should be provided showing the pre-restoration condition supporting the UMAM. Calculations in the UMAM were incorrect. The COE should review UMAM procedures and the correct calculation of “Functional Gain”.	Concur. The section containing the UMAM evaluation has been corrected.
The Florida Department of State (DOS)	This project could have an effect on the original design of the HHD however, DOS concurs that the proposed necessary modifications will have no adverse effect on the characteristics qualifying this property for listing in the National Register of Historic Places.	Noted.
The South Florida Water Management District (SFWMD)	Investigate the impact of potential continual wet toe on dam safety, particularly in areas adjacent to structures.	There will be no impact on dam safety. This toe ditch fill and seepage berm was recommended by a panel of experts on dam safety.
SFWMD-2	What types of material will be used to encase the perforated culvert and prevent it from becoming impermeable?	A perforated culvert will not be used in this design. This text has been removed from the EA.
SFWMD-3	What is the length of the cutoff wall and how does this cutoff wall significantly change the impact from that described in Alternative 3?	Cutoff wall depth will vary depending on individual site conditions. Design is ongoing and details will be provided when available in an EIS Supplement for Reach 1.
SFWMD-4	Why would Priority Area 2 and the adjacent borrow ditches be evaluated in this assessment?	Priority area P-2 is a borrow pit and requires a different fix that will not be evaluated in this EA.
SFWMD-5	Will the paved portion be repaved after construction and those shell rock portion will be restored as is?	The Corps will continue, consistent, with its authority and funding, through design refinement to seek to reduce and minimize impacts to the Lake Okeechobee Scenic Trail. The Corps will explore utilization of Section 111 authority of the 1958 River and Harbor Act, Public Law 85-5000, to determine if it is appropriate to pay for the cost to remediate impacts tot eh lake Okeechobee Scenic Trail out of project funds.

SFWMD-6	Will the new regulation schedule remain in place or will there be a tendency to revert back to higher lake stages?	Toe ditch repair will begin under existing Regulation Schedule, called WSE. However, the Lake Okeechobee Regulation Schedule has been undergoing re-evaluation. After the proposed new schedule has been coordinated under NEPA, and if adopted, it will enter into effect. Since the dike is designed for extreme conditions, it would not be affected by the Regulation Schedule.
SFWMD-7	The EA does not identify where USACE is planning on getting the fill for the widened embankment and for filling the existing seepage ditch.	Fill will probably be obtained from commercial sources.
Sugar Cane Growers Cooperative of Florida (SCGCF) - 1	Priority area 1 and 6 in Reach 1 is not within the existing ROW. This area contains unique farmland that fits the description under the Farmland Protection Policy Act of 1981; therefore these requirements are applicable to the EA.	Work covered in this EA will not occur outside of the ROW. When additional real estate requirements, if any, have been identified and impacts of its acquisition have been evaluated, a Supplement to the Reach 1 EIS will be written to address these lands.
SCGCF - 2	The EA does not describe the benefits the levee system would receive from completing only the toe ditch repairs. This EA appears to violate the anti-segmentation policy of 40 CFR Section 1580.25. Specifically, the filling of the toe ditch is a connected action in that the work is an interdependent part of a larger action and depends on the larger action for justification.	This EA discusses the recommended rehabilitation actions for public safety in Reach 1. There was no incremental cost or benefits analysis conducted, but rather a risk analysis related to the probability of dam failure if the recommended actions are not taken.
SCGCF - 3	The DSEIS for Reaches 2 and 3 proposes two different alternative designs that do not require additional land acquisition and both are deemed to be adequately protective of public safety. Why weren't these alternatives also evaluated for Reach 1?	The DSEIS for Reaches 2 and 3 described previously coordinated alternatives, which were believed at the time (1999) to provide adequate safety. More recent (2006) safety evaluations found the previously considered alternatives, including the previously selected alternative for Reach 1, inadequate.
Treasure Coast Regional Planning Council (TCRPC)	Every effort should be made to minimize impact to private property owners, the LOST, wetlands, listed species and navigation on the lake in the vicinity of the project.	Concur.

Audubon - 1	My workplan actually calls for us to support dike repair efforts.	Thank you.
Miami-Dade County - 1	The preferred structural alternative, including a barrier wall extending into the underlying substrate and a seepage berm at the toe appears to be an appropriate engineering solution for minimizing leaks.	Thank you.
Pelican Lake Water Control District (PLWCD) - 1	PLWCD Pumping Unit No.1 does have a connection to Lake Okeechobee at Station 1695+00 which is used to provide irrigation water to the higher lands on the north end of the District. This connection and its function should not be altered during the design and construction of the dike improvements.	Noted. USACE will contact PLWCD for further details.
East Beach Water Control District (EBWCD) - 1	The proposed 150' wide seepage berm and collector ditch will have a significant impact on most of the residential lots along the existing alignment of the Herbert Hoover Dike. Alternatives to the proposed facility should be considered in light of the extremely high cost of acquiring land and improvements through the City of Pahokee.	Concur. All alternatives will be considered to minimize impacts to residential lots along the HDD,
East Shore Water Control District (ESWCD) – 1	ESWCD No. 1 pump station does discharge to Lake Okeechobee and will also require the design of the cut off wall adjacent to the pump station that will allow the continued operation of the pump in both the drainage and irrigation mode. The pump station is located near Station 235+500.	USACE will contact ESWCD for further details.
South Florida Conservancy District (SFCD) – 1	SFCD Unit No. 6 extends from Station 236-000 to 254+000 a total distance of 2.8 miles. The northern part of this unit is adjacent to some abandoned rock pits which extends to the COE ROW. Design of the seepage containment berm and cut-off wall will have to be specifically designed for this area because of the impact to that excavation and the subsurface conditions.	USACE will contact SFCD for further details.

SFCD – 2	SFCD Pumping Unit No. 5 is adjacent to US 27, consideration of seepage control in this area will involve the relocation of the seepage ditch or additional toe cut off wall adjacent to US 27 in order to provide stability in this area.	USACE will contact SFCD for further details.
SFCD – 3	The preferred alternative includes the acquisition of significant parcels of land and improvements through the entire length; consideration of a structural cut off wall at the existing ROW line might be more economical alternative than the acquisition of land and structures in the 150' area of the proposed seepage berm construction.	Noted. The Reach 1 EA discusses the <i>concept</i> of a combination of a seepage berm and cutoff wall. These two features will act in combination to provide the required level of protection. The particular combination recommended for each reach will be developed further and coordinated in a future SEIS. The 150 foot area is an average and this distance will not be needed for the entire length of the proposed project.
Palm Beach County (PBC) -1	District Commissioner Jess R. Santamaria representing Canal Point fully supports this effort and the Countywide Community Revitalization Team's (CCRT) initiatives for this area.	Thank you.
PBC - 2	Request that the Corps leave in place and allow for public use of the dirt ramp that currently provides access to the HHD from the Five Smooth Stones, Inc. property, lying approximately ½ mile south of the Palm Beach and Martin County boundary line and approx. 7.5 miles N of Pahokee in Section 35, Tier 40S, Range 37.	Concur.

REFERENCES

Herbert Hoover Dike, Major Rehabilitation Evaluation Report, dated November 2000.

Herbert Hoover Dike, Major Rehabilitation Evaluation Report, Reach One, Draft and Final Environmental Impact Statement, March and July 2005.

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**HERBERT HOOVER DIKE MAJOR REHABILITATION
HENDRY, GLADES, AND PALM BEACH COUNTIES**

**DRAFT ENVIRONMENTAL ASSESSMENT
AND
PROPOSED FINDING OF NO SIGNIFICANT IMPACT**

APPENDICES

**MODIFIED DESIGN IN REACH 1
AND
PRIORITY TOE DITCH REPAIRS IN REACHES 1, 2, AND 3**

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APPENDIX A
404(b) EVALUATION

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SECTION 404(b) EVALUATION

HERBERT HOOVER DIKE MAJOR REHABILITATION PRIORITY TOE DITCH REPAIRS – REACHES 1, 2 AND 3 HENDRY AND PALM BEACH COUNTIES

I. Project Description

a. Location. The existing HHD system is approximately 143 miles (230 km) long, and comprises five counties: Glades, Hendry, Martin, Okeechobee, and Palm Beach. It is divided into eight segments or “Reaches” for planning purposes. The southeastern segment, Reach 1, is the focus of the present study. Reach 1 is an approximately 22.4 miles (36 km) long segment of the HHD located along the southeast portion of the lake. This segment extends from the St. Lucie Canal at Port Mayaca, south to the Hillsboro Canal at Belle Glade (see Error! Reference source not found. of the EA).

b. General Description. The proposed project includes a landside seepage berm and cutoff wall to provide protection at the toe of the dike, to increase stability, and reduce seepage. Since the seepage berm is relatively easy to construct, reliable, and a separable element it can be implemented immediately in the most critical areas of the dike where adequate space is available. At the conceptual level, the seepage berm will extend approximately 150 ft from the toe of the dike. This EA is evaluating environmental effects of the seepage berm within the existing ROW. A future EIS will be produced to assess the effects of the seepage berm outside the existing ROW. A drainage swale would also be constructed along the landward toe of the berm to collect and convey surface drainage from each side of the seepage berm. An impermeable cut-off wall will be implemented at the crest of the dike and extend approximately 10 feet below the first limestone layer. The cut off wall will provide resiliency against seepage caused by piping and groundwater flow. The width of the wall will be 2 feet. The cut-off wall material will be decided after the plans and specifications are prepared (see Error! Reference source not found.).

c. Authority and Purpose. The Flood Control Act (Act), approved by Congress on 30 June 1948, authorized the first phase of a comprehensive plan to provide flood protection and other water control benefits in central and south Florida. The Act included measures for improving control of Lake Okeechobee by constructing or modifying the spillways and other structures, and enlarging the Lake Okeechobee levees to provide the intended flood protection, water storage and water supply. Levee seepage and stability have a direct effect on the capability of the levee to provide the authorized protection. The authorization for levee repairs and modifications of the Flood Control Act of 1948 justify the proposed renovation to the HHD.

The general goal of the HHD MRR is to provide a reliable embankment system around Lake Okeechobee to contain the lake waters for flood protection, water supply, and navigation. An unreliable embankment system, such as that which currently exists along the HHD, could allow for a failure of the system to contain lake waters. Such a failure could result in loss of life,

property, and habitat. A reasonable and effective rehabilitative effort is required to eliminate this possibility.

d. General Description of Dredged or Fill Material.

(1) General Characteristics of Material. Material from the levee will need to be excavated prior to installation of the cutoff wall and seepage berm. This material is composed primarily of fill material for the HHD from the excavation of lake rim canal and contains a mixture of sand, silts and clays with varying content of organic materials. The proposed seepage berm will be composed of select granular materials, primarily limestone or quartz, gravel and sand sized particles. The material of the cutoff wall will be determined during the detailed design after the preparation of the plans and specifications.

(2) Quantity of Material. The material needed to backfill the identified priority areas is approximately 15,544 cubic yards of sand and 67,280 cubic yards of # 2 grade rock (3/4" stone and larger). The quantity of material needed for the seepage berm within the existing ROW and the cut-off wall will be determined during detailed design.

(3) Source of Material. No definitive source of borrow material has been identified. A commercially licensed source of quarry material that produces ASPM standard gradations will be identified.

e. Description of the Proposed Discharge Site.

(1) Location. See **Figure 1.1** of the EA.

(2) Size. The priority discharge sites total an approximate 20,000 feet of toe ditch. The partial seepage berm (within existing ROW) and cut-off wall will extend along approximately 22 miles of landward HHD slope and HHD toe.

(3) Type of Site. The project site is an upland embankment composed primarily of fill material and vegetated by mixed grasses. The embankment toe is bordered by a toe ditch throughout most of Reach 1. The toe ditch contains mostly invasive or exotic vegetation, but provides wetland habitat. Agricultural fields and residential development are adjacent to the HHD.

(4) Type of Habitat. The habitat consists of upland grasslands, invasive brush, inundated toe ditches, and residential back yard areas.

(5) Timing and Duration of Dredging. No dredging is specified for this work.

f. Description of Disposal Method. Disposal method will be determined as necessary for construction of each project element.

II. Factual Determinations

a. Physical Substrate Determinations (consider items in sections 230.11(a) and 230.20 Substrate)

(1) Substrate Elevation and Slope. At the conceptual level the cutoff wall will be excavated 34 NGVD to -20 elevation. The HHD landward toe ranges in elevation from 12 to 14 feet NGVD of 1929. The fill areas are at the base of the back toe of the landward side of the dike. Specific information regarding topography may be found in Section 3.03 of the FEIS.

(2) Type of Fill Material. The proposed fill for seepage berm will be composed of select granular materials primarily limestone or quartz, gravel and sand sized particles. Cutoff wall will be composed of cementitious slurry.

(3) Dredged/Fill Material Movement. The fill material will be stabilized and should not be subject to erosion.

(4) Physical Effects on Benthos. Benthic organisms may be temporarily displaced during construction activities.

b. Water Circulation. Fluctuation and Salinity Determinations

(1) Water Column Effects. Standing water and soils periodically inundated will be temporarily impacted during construction. Turbidity and erosion will be controlled during and post-construction.

(2) Current Patterns and Circulation. Construction of the seepage berm at the toe ditches should have minimal effect on current hydrologic circulation patterns. Construction of the cutoff wall will have an impact to hydrological patterns within the HHD footprint. Seepage will flow between the bottom edge of the wall and the impervious layer. The underseepage will then be collected in a swale.

(3) Normal Water Level Fluctuations and Salinity Gradients. Surface and ground water levels will not be affected. Salinity levels should not be affected by the proposed project.

c. Suspended Particulate/Turbidity Determinations.

(1) Expected Changes in Suspended Particulates and Turbidity Levels in the Vicinity of the Disposal Site. There may be a temporary increase in turbidity levels in the project area during discharge. Turbidity will be short-term and localized and no significant adverse impacts are expected. State standards for turbidity will not be exceeded.

(2) Effects on the Chemical and Physical Properties of the Water Column. There may be temporary impacts to the chemical and physical properties of nearby waters during construction activities. There are no acute or chronic chemical impacts anticipated as a result of construction. An environmental protection plan, prepared during detailed design, will address concerns regarding monitoring of equipment, maintenance and security of fuels, lubricants etc.

(a) Light Penetration. Some decrease in light penetration may occur in the immediate vicinity of the construction area. This effect will be temporary, limited to the immediate area of construction, and will have no adverse impact on the environment.

(b) Dissolved Oxygen. Dissolved oxygen levels will not be altered by this project.

(c) Toxic Metals, Organics, and Pathogens. No toxic metals, organics, or pathogens are expected to be released by the project.

(d) Aesthetics. The aesthetic quality of the water in the immediate area of the project may be temporarily affected by turbidity during construction. This will be a short-term and localized condition.

(3) Effects on Biota.

(a) Primary Productivity and Photosynthesis. Fill will replace approximately 22 miles of HHD toe vegetated by mixed up land grasses. An access road will be built on top of berm, eliminating their primary productivity. Primary production within the lake outflows should not be affected.

(b) Suspension/Filter Feeders. An increase in turbidity in the toe ditch could adversely impact burrowing invertebrate filter feeders within and adjacent to the immediate construction area. It is not expected that a short-term, temporary increase in turbidity will have any long-term negative impact on these highly fecund organisms.

(c) Sight Feeders. No significant impacts on these organisms are expected as the majority of sight feeders are highly motile and can move outside the project area.

d. Contaminant Determinations. Material which will be dredged from the proposed borrow site will not introduce, relocate, or increase contaminants at the fill area.

e. Aquatic Ecosystem and Organism Determinations.

(1) Effects on Plankton. No adverse impacts on autotrophic or heterotrophic organisms are anticipated.

(2) Effects on Benthos. No adverse impacts benthic organisms are anticipated.

(3) Effects on Nekton. Mostly small forage fish may be temporarily displaced by construction and turbid water. However, no long-term adverse impacts on nekton are anticipated.

(4) Effects on the Aquatic Food Web. No adverse impacts on aquatic organisms is anticipated. There is expected to be a relatively minor temporary effect on the aquatic food web due to construction activities. Wetlands at toe ditch and lake should maintain their functional value.

(5) Effects on Special Aquatic Sites.

(a) Hardground and Coral Reef Communities. There are no hardground or coral reef communities located within the proposed project site.

(6) Endangered and Threatened Species. There will be no significant adverse impacts on any threatened or endangered species or on critical habitat of any threatened or endangered species. Refer to Section 4.10 Environmental Commitments of this EA for measures that will be implemented to protect endangered and threatened species.

(7) Other Wildlife. No adverse impacts to small foraging mammals, reptiles, or wading birds, or wildlife in general are expected.

(8) Actions to Minimize Impacts. All practical safeguards will be taken during construction to preserve and enhance environmental, aesthetic, recreational, and economic values in the project area. Specific precautions are discussed in the in the Draft EA under Environmental Commitments.

f. Proposed Disposal Site Determinations.

(1) Mixing Zone Determination. The dredged material will not cause unacceptable changes in the mixing zone water quality requirements as specified by the State of Florida's Water Quality Certification permit procedures. No adverse impacts related to depth, current velocity, direction and variability, degree of turbulence, stratification, or ambient concentrations of constituents are expected from implementation of the project.

(2) Determination of Compliance with Applicable Water Quality Standards. Because of the inert nature of the material to be used as fill, Class III water quality standards will not be violated.

(3) Potential Effects on Human Use Characteristics.

(a) Municipal and Private Water Supplies. No municipal or private water supplies will be impacted by the implementation of the project.

(b) Recreational and Commercial Fisheries. Recreational and commercial fisheries should not be impacted by the implementation of the project.

(c) Water Related Recreation. Water related recreation in the immediate vicinity of construction will likely be impacted during construction activities. This will be a short-term impact.

(d) Aesthetics. The existing environmental setting may be adversely impacted, particularly at parks and other natural settings. Construction activities will cause a temporary increase in noise and air pollution caused by equipment as well as some temporary increase in turbidity. Some vegetation buffering natural areas or parks may be unavoidably removed during construction. These impacts are not expected to adversely affect the aesthetic resources over the long term and once construction ends, conditions will return to pre-project levels. Trees removed would be replaced.

(e) Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves. State and local parks do exist within the proposed project area and would be temporarily impacted by construction activities as described in (d) above. In addition, certain stretches of the LOST may be damaged or removed by construction activities. These impacts would be minimized and avoided as practicable.

g. Determination of Cumulative Effects on the Aquatic Ecosystem. There will be no cumulative impacts that result in a major impairment of water quality of the existing aquatic ecosystem as a result of the placement of fill at the project site.

h. Determination of Secondary Effects on the Aquatic Ecosystem. There will be no secondary impacts on the aquatic ecosystem as a result of the construction.

III. Findings of Compliance or Non-compliance with the Restrictions on Discharge.

a. No significant adaptations of the guidelines were made relative to this evaluation.

b. No practicable alternative exists which meets the study objectives that does not involve discharge of fill into waters of the United States.

c. The discharge of fill materials will not cause or contribute to, violations of any applicable State water quality standards for Class III waters. The discharge operation will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

d. The placement of fill materials for implementation of the proposed project will not jeopardize the continued existence of any species listed as threatened or endangered or result in the likelihood of destruction or adverse modification of any critical habitat as specified by the Endangered Species Act of 1973, as amended.

e. The placement of fill material will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. The life stages of aquatic species and other wildlife will not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values will not occur.

f. Appropriate steps have been taken to minimize the adverse environmental impact of the proposed action. Turbidity will be monitored so that if levels exceed State water quality standards, the contractor will be required to cease work until conditions return to normal.

g. On the basis of the guidelines, the proposed disposal of dredged material and fill of wetlands are specified as complying with the requirements of these guidelines.

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APPENDIX B

**COASTAL ZONE MANAGEMENT PROGRAM
FEDERAL CONSISTENCY EVALUATION PROCEDURES**

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**FLORIDA COASTAL ZONE MANAGEMENT PROGRAM
FEDERAL CONSISTENCY EVALUATION PROCEDURES**

**HERBERT HOOVER DIKE MAJOR REHABILITATION
REACHES 1, 2 AND 3**

1. Chapter 161, Beach and Shore Preservation. The intent of the coastal construction permit program established by this chapter is to regulate construction projects located seaward of the line of mean high water and which might have an effect on natural shoreline processes.

Response: The proposed work project is not seaward of the mean high water line and would not affect shorelines or shoreline processes.

2. Chapters 186 and 187, State and Regional Planning. These chapters establish the State Comprehensive Plan which sets goals that articulate a strategic vision of the State's future. Its purpose is to define in a broad sense, goals, and policies that provide decision-makers directions for the future and provide long-range guidance for an orderly social, economic and physical growth.

Response: The proposed work has been coordinated with the State without objection.

3. Chapter 252, Disaster Preparation, Response and Mitigation. This chapter creates a state emergency management agency, with the authority to provide for the common defense; to protect the public peace, health and safety; and to preserve the lives and property of the people of Florida.

Response: The proposed project purpose is to strengthen and protect the existing lake levee system, thereby ensuring adequate flood control for residents of the region. No action may result in conditions which enhance the possibility of a project failure, resulting in an emergency situation and potentially causing significant damage to persons and property. Therefore, this work would be consistent with the efforts of Division of Emergency Management.

4. Chapter 253, State Lands. This chapter governs the management of submerged state lands and resources within state lands. This includes archeological and historical resources; water resources; fish and wildlife resources; beaches and dunes; submerged grass beds and other benthic communities; swamps, marshes and other wetlands; mineral resources; unique natural features; submerged lands; spoil islands; and artificial reefs.

Response: The proposed project is the least destructive to the aforementioned resources of all the action alternatives considered. The existing habitat within the project area is of marginal quality and has largely been developed for agriculture, urban and residential uses. Impacts to wetlands are expected to be mitigated in the area, enhancing the wetlands functional value of inundated quarries.

5. Chapters 253, 259, 260, and 375, Land Acquisition. This chapter authorizes the state to acquire land to protect environmentally sensitive areas.

Response: At this time it is not known what lands may need to be purchased for completion of the proposed project. Initial indications are that most lands are already within the HHD levee right of way and are therefore in Federal ownership. Any lands that will need to be acquired will be covered under the EIS that will assess the seepage berm not within the existing ROW.

6. Chapter 258, State Parks and Aquatic Preserves. This chapter authorizes the state to manage state parks and preserves. Consistency with this statute would include consideration of projects that would directly or indirectly adversely impact park property, natural resources, park programs, management or operations.

Response: The proposed work may affect Pahokee State Park arboreal resources with removal for construction access (Section 5, pg FEIS-57). Municipal and county parks may be temporarily affected, however these areas would be returned to their pre-construction condition following completion of the project. Portions of the LOST may be impacted or removed from the dike levee. Impacts will be avoided and minimized to the extent practicable throughout construction activities.

7. Chapter 267, Historic Preservation. This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities.

Response: This project has been coordinated with the State Historic Preservation Officer (SHPO). SHPO consultation on Reach 1 was initiated August 20, 1999. In April 7 2005, response, the SHPO concurred with the Corps' no adverse effect determination on Reach 1. The project will not affect historic properties included in or eligible for inclusion in the National Register of Historic places. Consultation for Reaches 2 and 3 is ongoing. The project is in compliance with each of these Federal laws. Historic preservation compliance will be completed to meet all responsibilities under Chapter 267.

8. Chapter 288, Economic Development and Tourism. This chapter directs the state to provide guidance and promotion of beneficial development through encouraging economic diversification and promoting tourism.

Response: Contribution from the study area to the State's tourism economy would not be compromised by project implementation. Temporary, short-term impacts may be realized during construction due to effects to municipal and county parks and bank fishing areas. These effects are not expected to be significant. The project would be compatible with tourism for this area and could potentially contribute to overall growth and development of the area therefore, would be consistent with the goals of this chapter.

9. Chapters 334 and 339, Transportation. This chapter authorizes the planning and development of a safe balanced and efficient transportation system.

Response: The proposed project would not impact the existing public transportation system of the area and therefore, would be consistent with the goals of this chapter.

10. Chapter 370, Saltwater Living Resources. This chapter directs the state to preserve, manage and protect the marine, crustacean, shell and anadromous fishery resources in state waters; to protect and enhance the marine and estuarine environment; to regulate fishermen and vessels of the state engaged in the taking of such resources within or without state waters; to issue licenses for the taking and processing products of fisheries; to secure and maintain statistical records of the catch of each such species; and, to conduct scientific, economic, and other studies and research.

Response: The proposed HHD Major Rehabilitation project is located completely inland and would have no affect on saltwater resources either directly or indirectly through discharge downstream. The proposed project is therefore not applicable to chapter 370.

11. Chapter 372, Living Land and Freshwater Resources. This chapter establishes the Game and Freshwater Fish Commission and directs it to manage freshwater aquatic life and wild animal life and their habitat to perpetuate a diversity of species with densities and distributions which provide sustained ecological, recreational, scientific, educational, aesthetic, and economic benefits.

Response: The proposed project has been coordinated with the Florida Game and Fresh Water Fish Commission (GFC) without objection. In a letter dated November 12, 1998, the GFC concurred with findings and recommendations of the U.S. Fish and Wildlife Service for fish and wildlife protection as outlined in the draft CAR (see Annex A). The Corps has agreed to comply with these recommendations as outlined in Section 5.00 of the EIS. Therefore, the work would comply with the goals of this chapter.

12. Chapter 373, Water Resources. This chapter provides the authority to regulate the withdrawal, diversion, storage, and consumption of water.

Response: The proposed project does not involve the transportation or discharge of pollutants. Environmental protection measures will be enforced during construction to avoid inadvertent spills or other sources of pollution.

13. Chapter 376, Pollutant Spill Prevention and Control. This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

Response: This work does not involve the transportation or discharging of pollutants. Conditions will be placed in the contract to handle any inadvertent spill of pollutants. Therefore, the project would comply with this Act.

14. Chapter 377, Oil and Gas Exploration and Production. This chapter authorizes the regulation of all phases of exploration, drilling, and production of oil, gas, and other petroleum products.

Response: This work does not involve the exploration, drilling or production of gas, oil or petroleum product and therefore does not apply.

15. Chapter 380, Environmental Land and Water Management. This chapter establishes criteria and procedures to assure that local land development decisions consider the regional impact nature of proposed large-scale development. This chapter also deals with the Area of Critical State Concern program and the Coastal Infrastructure Policy.

Response: The work does not involve land development as described by this chapter; therefore, this chapter is not applicable.

16. 388 (Mosquito/Arthropod Control). Chapter 388 provides for a comprehensive approach for abatement or suppression of mosquitoes and other pest arthropods within the state.

Response: The work would not further the propagation of mosquitoes or other pest arthropods.

17. Chapter 403, Environmental Control. This chapter authorizes the regulation of pollution of the air and waters of the state by the Florida Department of Environmental Regulation (now a part of the Florida Department of Environmental Protection).

Response: A Draft Environmental Assessment has been prepared and will be reviewed by the appropriate resource agencies including the Department of Environmental Protection.

18. Chapter 582, Soil and Water Conservation. This chapter establishes policy for the conservation of the state soil and water through the Department of Agriculture. Land use policies will be evaluated in terms of their tendency to cause or contribute to soil erosion or to conserve, develop, and utilize soil and water resources both onsite or in adjoining properties affected by the project. Particular attention will be given to projects on or near agricultural lands.

Response: The proposed work is located near to, but would not be expected to adversely impact agricultural lands. Project implementation would include appropriate erosion control plans and measures to ensure compliance.

APPENDIX C
MITIGATION ASSESSMENT

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MITIGATION ASSESSMENT

Table C-1 contains the calculations performed to determine the required mitigation for the nine priority areas. The priority areas that require additional ROW will be covered in the next EIS for Reach 1. Therefore, the required mitigation for priority areas within the existing ROW is calculated to be 3.8 acres.

TABLE C-1: MITIGATION ACRES REQUIRED BASED ON FEBRUARY 2000 WRAP ANALYSIS FOR REACH 1

Site Name	Location Description	Length of Repair (ft)	Width (ft)	Area (acre)	WRAP Sample Site ID	WRAP Summary Score	Mitigation Credit Required (habitat units)
Reach 1 Sites where Toe Ditch is within Existing ROW							
Priority 0	Sandcut S-352 South for 1-mile	6000	20	2.8	8	0.65	1.8
Priority 5	S-352 North for 1/2 mile	5280	15	1.8	12	0.65	1.2
Priority 7	1/4 mile north of C10 for 500 ft	2640	15	0.9	12	0.65	0.6
Priority 4	Sugar Ramp South 1/2 mile (southern 800 ft)	500	8	0.1	14	0.57	0.1
Priority 1		800	8	0.1	15	0.32	0.0
TOTALS		15220		5.7			3.7
Reach 1 Sites where Additional ROW Must be Acquired Prior to Filling							
Priority 6	Sugar Ramp North 1/4 mile	1600	8	0.3	15	0.32	0.1
Priority 1	Sugar Ramp South 1/2 mile (northern 1900 ft)	1900	8	0.3	15	0.32	0.1
TOTALS		3500		0.6			0.2
Sites in Reach 3 where Toe Ditch is within Existing ROW							
Priority 8	Sugar Ramp North 1/4 mile	600	8	0.1	15	0.32	0.0
Priority 3	Sugar Ramp South 1/2 mile (northern 1900 ft)	1000	8	0.2	15	0.32	0.1
TOTALS		1600		0.3			0.1
GRAND TOTAL		20320		6.7			4.0
Note: Priority Site #2 is not included as it is a borrow pit that will require a different engineering solution.							

MITIGATION CREDITS

The Uniform Mitigation Assessment Method (UMAM) was used to score the quality of the habitat created from the wetland tree planting and the Melaleuca removal. The qualitative and quantitative assessments are located below.

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Herbert Hoover Dike		Application Number		Assessment Area Name or Number Reach 2	
FLUCCs code		Further classification (optional)		Impact or Mitigation Site? Mitigation	Assessment Area Size 57 acres
Basin/Watershed Name/Number Lake Okeechobee	Affected Waterbody (Class) III Drinking Water		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) Federal Navigation		
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Seepage connection, along Lake Okeechobee shoreline					
Assessment area description Reach 2 = Melaleuca Removal (1 mile east from west end) : 57 acres					
Significant nearby features HHD, Lake O Scenic Trail, highway, agricultural areas, park			Uniqueness (considering the relative rarity in relation to the regional landscape.) N/A		
Functions Minimal habitat			Mitigation for previous permit/other historic use N/A		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Otter, alligator, turtle, wading birds, dicky birds, fish, aquatic invertebrates			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Caracara, burrowing owls, indigo snakes, woodstork, bald eagle		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Above list observed in Reach 1					
Additional relevant factors: Hendry and Glades counties					
Assessment conducted by: Nancy Allen (Corps), Jennifer Smith (FDEP), and Agustin Valido (FWS)				Assessment date(s): 1/11/2007	

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Reach 2 HHD	Application Number	Assessment Area Name or Number Melaleuca Removal
Impact or Mitigation Mitigation	Assessment conducted by: Nancy Allen, Jennifer Smith, and Agustin Valido	Assessment date: January 11, 2007

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
--	---	---	--	---

.500(6)(a) Location and Landscape Support w/o pres or current 4 with 6	Adjacent to reach 2, near the Alvin Ward Boat Ramp.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 4 with 6	On lakeside of HHD.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 1 with 6	

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres 0.3 with 0.6

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 17.1

Delta = [with-current]
0.3

If mitigation
Time lag (t-factor) = 1.00
Risk factor = 1

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.3

Mitigation Determination Formulas
(See Section 62-345.600(3), F.A.C.)

For each impact assessment area:

(FL) Functional Loss = Impact Delta X Impact acres

For each mitigation assessment area:

(RFG) Relative Functional Gain = Mitigation Delta (adjusted for preservation, if applicable)/((t-factor)(risk))

(a) Mitigation Bank Credit Determination

The total potential credits for a mitigation bank is the sum of the credits for each assessment area where assessment area credits equal the RFG times the acres of the assessment area scored

Bank Assessment Area	RFG	X	Acres	= Credits
example				
a.a.1	0.3		57	17.1
a.a.2				
total				

(b) Mitigation needed to offset impacts, when using a mitigation bank

The number of mitigation bank credits needed, when the bank or regional offsite mitigation area is assessed in accordance with this rule, is equal to the summation of the calculated functional loss for each impact assessment area.

Impact Assessment Area	FL	=	Credits needed
example			
a.a.1			
a.a.2			
total			

(c) Mitigation needed to offset impacts, when not using a bank

To determine the acres of mitigation needed to offset impacts when not using a bank or a regional offsite mitigation area as mitigation, divide functional loss (FL) by relative functional gain (RFG). If there are more than one impact assessment area or more than one mitigation assessment area, the total functional loss and total relative functional gain is determined by summation of the functional loss (FL) and relative functional gain (RFG) for each assessment area.

	FL	/	RFG	=	Acres of Mitigation
example					
a.a.1					
a.a.2					
total					

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Plants Species of UMAM Assessment Areas
Herbert Hoover Dike, Reaches 2 and 3

alligator flag (*Thalia geniculata*)
alligatorweed (*Alternanthera philoxeroides*)
australian pine (*Casuarina equisetifolia*)
bahia grass (*Paspalum notatum*)
banana (*Musa* sp.)
barrcharis (*Baccharis* sp.)
bladderwort (*Utricularia* sp.)
brazilian pepper (*Schinus terebinthifolius*)
broomsedge (*Andropogon* sp.)
bulrush (*Scirpus* sp.)
buttonweed (*Diodia virginiana*)
cabbage palm (*Sabal palmetto*)
camphorweed (*Pluchea* sp.)
cattail (*Typha* sp.)
climb hemvine (*Mikania scandens*)
common reed (*Phragmites australis*)
creeping cucumber (*Melothria pendula*)
dayflower (*Commelina* sp.)
duck potato (*Sagittaria* sp.)
duckweed (*Lemna* sp.)
elderberry (*Sambucus nigra* subsp. *canadensis*)
elephant ears (*Xanthosoma sagittifolium*)
golden pothos (*Epipremnum pinnatum*)
guava (*Psidium* sp.)
leather fern (*Acrostichum danaeifolium*)
marshmallow (*Kosteletzkya virginica*)
napiergrass (*Pennisetum purpureum*)
papaya (*Carica papaya*)
pennywort (*Hydrocotyle* sp.)
pickerelweed (*Pontederia* sp.)
pond apple (*Annona glabra*)
pond-cypress (*Taxodium ascendens*)
primrose willow (*Ludwigia peruviana*)
punk tree (*Melaleuca quinquenervia*)
queen palm (*Syagrus romanzoffiana*)
ragweed (*Ambrosia artemisiifolia*)
red primrose willow (*Ludwigia repens*)
royal palm (*Roystonea regia*)
sawgrass (*Cladium jamaicense*)
scheffera (*Schefflera* sp.)
shield fern (*Thelypteris* sp.)
smartweed (*Polygonum* sp.)
southern willow (*Salix caroliniana*)
spatterdock (*Nuphar* sp.)

spikerush (*Eleocharis* sp.)
strangler fig (*Ficus aurea*)
sugarcane (*Saccharum officinarum*)
torpedo grass (*Panicum repens*)
unknown palm
water hemlock (*Cicuta maculata*)
water lettuce (*Pistia stratiotes*)
white vine (*Sarcostemma clausum*)

APPENDIX D
PERTINENT CORRESPONDENCE

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Florida Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary - Designee

January 12, 2007

Ms. Nancy Allen
Planning Division, Jacksonville District
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: Department of the Army, Jacksonville District Corps of Engineers (USACE) –
Draft Environmental Assessment for the Herbert Hoover Dike (HHD) Major
Rehabilitation, Modified Design in Reach 1 and Priority Toe Ditch Repairs in
Reaches 1, 2, and 3 – Glades, Hendry, and Palm Beach Counties, Florida.
SAI # FL200612122959C

Dear Ms. Allen:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the draft environmental assessment (EA).

The Florida Department of Environmental Protection (DEP) supports the USACE's plans to expedite the repair and rehabilitation of the dike in order to ensure the continued protection of lives and property in the communities around the lake. However, DEP staff notes that temporary adverse impacts to recreational and aesthetic resources on the Lake Okeechobee Scenic Trail (LOST) would occur as a result of implementing Alternative No. 5.. While the USACE is not currently authorized to repave the LOST, the USACE indicates that the contractor will re-grade sections of the trail disturbed by construction of the cut-off wall area. The final environmental document should address the potential impacts of not restoring the trail to its pre-construction condition. The DEP understands that the dike rehabilitation takes precedent and is critical for the safety and well-being of those living in South Florida. However, there will be significant loss of recreational opportunity and community impacts if the trail is not repaired or replaced following dike rehabilitation. Staff recommends that the USACE and DEP initiate discussions to address the post-construction repair of any impacts to the trail, while facilitating the dike's rehabilitation and protecting the environment. Please refer to the enclosed DEP memorandum for additional details and comments.

The South Florida Water Management District (SFWMD) notes that the preferred alternative involves toe ditch backfilling in the problem areas, which will not allow for the free flow of water collecting along the downstream toe. SFWMD staff requests that the USACE investigate the impact of a potential continual wet toe on dam safety, particularly in areas adjacent to structures that may be prone to seepage water breaking through the downstream bank. SFWMD staff also requests additional information on a number of items relating to structural details, the proposed repair and requested repaving of the LOST, potential future effects on the Lake Okeechobee regulation schedule and lake levels, and identification of sources of fill for the project. Please refer to the enclosed SFWMD memorandum for further information.

The Florida Department of Transportation (FDOT) Districts One and Four have concluded their review of the subject report and note that any project impacts to the LOST, including trail surface, pedestrian bridges, berms, signage, mile markers, and/or other features installed by the State of Florida must be replaced to like or higher standards by the USACE. In addition, if the proposed project results in impacts to FDOT roadways or infrastructure, the USACE will need to obtain all necessary permits from the District One or Four local operations center prior to construction activities occurring within state road rights-of-way. Please see the enclosed FDOT memorandum and contact Ms. Amie K. Goddeau, P.E., at (954) 777-4343 for additional information.

The Treasure Coast Regional Planning Council (TCRPC) notes that the study is not in conflict or inconsistent with the Strategic Regional Policy Plan. However, every effort should be made to minimize impacts to private property owners, the LOST, wetlands, listed species and navigation of the lake in the vicinity of the project. The City of Pahokee has expressed concerns in the attached letter to the TCRPC regarding the potential dislocation of homes alongside the dike as a result of USACE rehabilitation activities. If homes are to be relocated, the City indicates it could lose a significant portion of its tax base. The USACE should address the issues raised by the City as soon as appropriate.

The Florida Department of State (DOS) advises that this project could have an effect on the original design of the HHD (Site # 8PB2028), considered historically significant for its engineering design. However, the DOS concurs that the proposed necessary modifications will have no adverse effect on the characteristics qualifying this property for listing in the *National Register of Historic Places*. Please see the enclosed DOS letter.

Based on the information contained in the draft EA and the enclosed state agency comments, the state has determined that, at this stage, the proposed federal activities are consistent with the Florida Coastal Management Program (FCMP). Please continue to coordinate with DEP, SFWMD, FDOT, and local government staff regarding the issues raised above. The state's continued concurrence with the project will be based, in part, on the

Ms. Nancy Allen
January 12, 2007
Page 3 of 3

adequate resolution of issues identified during this and subsequent reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting stage.

Thank you for the opportunity to review the proposed project. Should you have any questions regarding this letter, please contact Ms. Lauren P. Milligan at (850) 245-2170.

Sincerely,



Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/lm
Enclosures

cc: John Outland, DEP, MS 45
Greg Knecht, DEP, MS 3560
Tim Gray, DEP, Southeast District
Gordon Romeis, DEP, South District
Jena Brooks, DEP, OGT
Jim Golden, SFWMD
Lisa Stone, FDOT
Stephanie Heidt, TCRPC
Laura Kammerer, DOS

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Florida

Department of Environmental Protection

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Project Information	
Project:	FL200612122959C
Comments Due:	01/02/2007
Letter Due:	01/11/2007
Description:	DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT CORPS OF ENGINEERS - DRAFT ENVIRONMENTAL ASSESSMENT FOR THE HERBERT HOOVER DIKE (HHD) MAJOR REHABILITATION, MODIFIED DESIGN IN REACH 1 AND PRIORITY TOE DITCH REPAIRS IN REACHES 1, 2, AND 3 - GLADES, HENDRY, AND PALM BEACH COUNTIES, FLORIDA.
Keywords:	ACOE - HERBERT HOOVER DIKE MAJOR REHAB, MODIFIED DESIGN, AND TOE DITCH REPAIRS
CFDA #:	12.106
Agency Comments:	
SW FLORIDA RPC - SOUTHWEST FLORIDA REGIONAL PLANNING COUNCIL	
No Comment	
TREASURE COAST RPC - TREASURE COAST REGIONAL PLANNING COUNCIL	
The study is not in conflict or inconsistent with the Strategic Regional Policy Plan. However, every effort should be made to minimize impacts to private property owners, the Lake Okeechobee Scenic Trail, wetlands, listed species and navigation of the lake in the vicinity of the project. The City of Pahokee has expressed concerns in the attached letter to Council regarding the potential dislocation of homes alongside the dike as a result of USACOE rehabilitation actions. If homes are to be relocated, the City indicates it could lose a significant portion of its tax base. The USACOE should address the issues raised by the City as soon as appropriate.	
GLADES - GLADES COUNTY	
HENDRY -	
PALM BEACH -	
The City of Pahokee has expressed concerns regarding the potential loss of area residences as a result of project implementation and requests that the Corps of Engineers investigate alternatives that would not impact residential structures and City revitalization efforts.	
COMMUNITY AFFAIRS - FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS	
FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION	
NO COMMENT BY SCOTT SANDERS ON 12/18/06.	
STATE - FLORIDA DEPARTMENT OF STATE	
Based on a review of the information provided, the Florida Department of State (DOS) advises that this project could have an effect on the original design of the Herbert Hoover DiKE (Site # 8PB2028), considered historically significant for its engineering design. However, this office concurs that the proposed necessary modifications will have no adverse effect on the characteristics qualifying this property for listing in the National Register of Historic Places.	

TRANSPORTATION - FLORIDA DEPARTMENT OF TRANSPORTATION
FDOT Districts One and Four have concluded their review of the subject report and note that any project impacts to the Lake Okeechobee Scenic Trail (LOST), including trail surface, pedestrian bridges, berms, signage, mile markers, and/or other features installed by the State of Florida must be replaced to like or higher standards by the Army Corps of Engineers. If the proposed project results in impacts to FDOT roadways or associated infrastructure in Districts One or Four, the Corps of Engineers will need to obtain all necessary permits from the FDOT District local operations center prior to construction activities occurring within state road rights-of-way.
ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
The DEP supports the USACE's plans to expedite the repair and rehabilitation of the dike in order to ensure the continued protection of lives and property in the communities around the lake. However, DEP staff notes that temporary adverse impacts to recreational and aesthetic resources on the Lake Okeechobee Scenic Trail (LOST) would occur as a result of implementing Alternative No. 5.. While the USACE is not currently authorized to repave the LOST, the USACE indicates that the contractor will re-grade sections of the trail disturbed by construction of the cut-off wall area. The final environmental document should address the potential impacts of not restoring the trail to its pre-construction condition. The DEP understands that the dike rehabilitation takes precedent and is critical for the safety and well-being of those living in South Florida. However, there will be significant loss of recreational opportunity and community impacts if the trail is not repaired or replaced following dike rehabilitation. Staff recommends that the USACE and DEP initiate discussions to address the post-construction repair of any impacts to the trail, while facilitating the dike's rehabilitation and protecting the environment.
SOUTH FLORIDA WMD - SOUTH FLORIDA WATER MANAGEMENT DISTRICT
The SFWMD notes that the preferred alternative involves toe ditch backfilling in the problem areas, which will not allow for the free flow of water collecting along the downstream toe. SFWMD staff requests that the USACOE investigate the impact of a potential continual wet toe on dam safety, particularly in areas adjacent to structures that may be prone to seepage water breaking through the downstream bank. SFWMD staff also requests additional information on a number of items relating to structural details, the proposed repair and requested repaving of the LOST, potential future effects on the Lake Okeechobee regulation schedule and lake levels, and identification of sources of fill for the project.

For more information please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD MS-47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

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Memorandum



TO: Florida State Clearinghouse

THROUGH: Greg Knecht, Administrator
Water Quality Standards & Special Projects Program

FROM: John Outland, Gordon Romeis, Stan Ganthier, Rick Halvorsen, and Tim Gray

DATE: January 12, 2007

SUBJECT: USACE, Jacksonville District – Draft Environmental Assessment for the Herbert Hoover Dike (HHD) Major Rehabilitation, Modified Design in Reach 1 and Priority Toe Ditch Repairs in Reaches 1, 2, and 3 – Glades, Hendry, and Palm Beach Counties, Florida.

SAI #: FL06-2959C

Background

This Department of Environmental Protection previously provided comments on the Scoping Notices for Environmental Impact Statements for the Rehabilitation of Reaches 1, 2 and 3. The subject Environmental Assessment (EA) evaluates the impacts associated with the preferred alternative to rehabilitate the Herbert Hoover Dike surrounding Lake Okeechobee. The preferred alternative consists of a landside seepage berm and cutoff wall at the dike crest to provide protection at the toe of the dike to increase stability and reduce seepage. The seepage berm will extend approximately 150 feet from the toe of the dike. This EA is evaluating the environmental effects of the seepage berm within the existing right-of-way. A future EIS will be produced to assess the effects of the seepage berm outside the existing right-of-way.

To expedite the rehabilitation of the dike, the U.S. Army Corps of Engineers (Corps) has identified nine priority areas where immediate repairs should be implemented. These areas were identified based on potential safety concerns associated with the levee in these areas due to continual seepage boils during water conditions of the lake over 15 ft NGVD. Six priority areas are located in Reach 1 and one each in Reaches 2 and 3. Priority Area P-2 is a borrow pit and requires a different rehabilitation solution and is not evaluated in this EA.

Landside wetlands associated with the existing toe ditch or other low lying areas will be moderately affected by the rehabilitation. These areas are used for foraging by wading birds but no significant impacts to listed species are expected. The U.S. Fish and Wildlife Service (USFWS) and Corps have determined that four habitat units of mitigation credits are required to offset the impacts to wetlands. The Corps currently has 27 mitigation bank credits from planting wetland trees and removing exotics. Therefore, no additional mitigation is being required by the USFWS for the project.

Comments

1. The Department supports the Corps' intention to expedite the repair and rehabilitation of the dike to ensure the continued protection of lives and property in the communities around the lake. We recognize that the Corps is accelerating the work in the priority areas of Reaches 1, 2 and 3 and will move forward with the remaining work as soon as possible.

2. The preferred alternative No. 5 consists of an impermeable cutoff wall at the crest of the dike that extends approximately 10 feet below the first limestone layer and a landside seepage berm that may extend approximately 150 feet from the toe of the dike. A drainage swale would also be constructed along the landward toe of the berm. Note that this environmental assessment evaluated environmental effects of the seepage berm within the existing right-of-way and that a future environmental impact statement will assess the effects of the seepage berm outside the existing right-of-way. Additional right-of-way will be acquired to fully implement alternative No. 5.

3. The Corps has proposed a finding of no significant adverse impact on the human environment as a result of implementing Alternative No. 5 within the existing right-of-way. Temporary impacts to recreational and aesthetic resources would occur during construction.

4. In Section 4 Page 33 under "RECREATION" the plan requires the contractor to replace disturbed trail elements, if any, during cut-off wall placement. In Section 4 Page 37 under "Recreation Resources" the plan states that an inventory of all park amenities and utilities prior to construction will facilitate a rapid return to pre-construction state for those areas so impacted. This section also states that the Corps does not have the Congressional authority to make repairs to such areas as the Lake Okeechobee Scenic Trail, which would be removed or impacted during construction. While the Corps is not currently authorized to repave the area, the Department understands from the Corps that the contractor will re-grade sections of the trail disturbed by construction of the cut-off wall area.

The local communities around the lake are strong advocates for a paved trail surface. The Florida Department of Transportation originally planned to only pave the trail between Moore Haven and Belle Glade. However, after concerns were expressed by the City of Pahokee, the segment of trail between Belle Glade and Pahokee was paved. This is the same paved segment of the trail that will be impacted by cut-off wall placement.

Since the trail was also awarded the Federal designation of Florida National Scenic Trail, temporary trail closure during levee rehabilitation should be accompanied with on-site signing and public notices.

Not restoring the trail to a pre-construction condition is an adverse impact that should be addressed in the final environmental document. The Department understands that the dike rehabilitation takes precedent and is critical for the safety and well-being of those living in South Florida. However, there will be significant loss of recreational opportunity and community impacts if the trail is not repaired or replaced following dike rehabilitation.

We request the Corps initiate discussions with the Department as soon as possible to determine a reasonable course of action to address the post-construction repair of any impacts to the trail.

5. Adverse impacts to wetlands have been offset by creation of wetland habitat through off-site mitigation. The Department will verify the UMAM scores and mitigation credits contained in Appendix C during an upcoming site visit on January 11, 2007.

6. If an alternative is chosen that affects land outside of the existing dike footprint, we recommend that the Corps coordinate with the Department's Division of State Lands concerning lands that may be owned by the state. Coordination with the Department's Southeast Regulatory District is recommended regarding any state permitting requirements for rehabilitation activities.

7. Drinking water intake pipes are located throughout the project area. It is imperative that the contractor be aware of the exact locations and diligently avoids impacting the pipes (i.e. damaging the pipes, creating turbid water near the intake, etc.)

8. It is recommended that the Corps and the Department continue to communicate and work cooperatively to facilitate the dike's rehabilitation while also protecting the environment.

cc: John Outland (email)
Gordon Romeis (email)
Stan Ganthier (email)
Tim Gray (email)
Rick Halvorsen (email)

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TO: Florida State Clearinghouse

FROM: James J. Golden, AICP, Senior Planner
Environmental Resource Regulation Department

DATE: January 10, 2007

SUBJECT: USACOE – DEA for Herbert Hoover Dike Major Rehabilitation, Modified Design in Reach 1 and Priority Toe Ditch Repairs in Reaches 1, 2, and 3 – Glades, Hendry, and Palm Beach Counties, Florida.
(SAI # FL200612122959C)

Please see the following SFWMD comments on the above subject proposal.

1. The preferred alternative is the toe ditch backfilling in the problem areas. The toe ditch infilling with gravel will not allow for the free draining of water collecting along the downstream toe. Previously, the water in the toe ditch allowed the farmers to draw the water for farming purposes. The farmers normally pump the water out from the ditch and route it to locations away from the toe of the dike. However, on implementation of the project, the seepage water will preferentially collect at these locations and will recede slowly following heavy rains. The USACOE should investigate the impact of a perpetual wet toe on dam safety, particularly in areas adjacent to structures, as it could be prone to seepage water breaking through the downstream bank.
2. Section 2.1.6 Page 13... What types of material will be used to encase the perforated culvert and prevent it from becoming impermeable?
3. 2.1.6 Page 13 Figure 2.6... What is the total length of the cutoff wall?
Alternative 3 was abandoned because the cutoff wall was determined to impact groundwater hydrology. It appears the cutoff wall for Alternative 5 was is not much different from that described in Alternative 3 other than it begins at the crest of the levee rather than the inward toe of the levee. How does this cutoff wall significantly change the impact from that described in Alternative 3?
4. 2.1.6 Page 19 Figure 2.12... Why would Priority Area 2 and the adjacent borrow ditches be evaluated in this assessment? Due to the close proximity of the borrow ditches to the landward toe ditch this would appear to be a key area to be addressed.

5. 4.0 Page 33 Table 4.1... Lake Okeechobee Scenic Trail, "The Contractor will be required to replace trail elements disturbed, if any, during cut-off wall emplacement. Coordination with FDEP on the Florida Natural Scenic Trail (FNST) would be conducted prior to and during construction." Can this statement be interpreted as those paved portions will be repaved after construction and those shell rock portions will be restored as is? Has there been any discussion to pave the top of the levee in portions of Reach 1 that is currently unpaved? By doing so would improve recreational benefits in the area.
6. 4.3 Page 35... Lake Okeechobee Operations, "The repair and rehabilitation of the Reaches together will affect the manageability of Lake Okeechobee. Once the dike is repaired, lake levels can fluctuate without jeopardizing the stability of the dike or the persons who live, farm or work adjacent to the dike." The lake regulation schedule has been reevaluated and adjusted to provide environmental enhancement to the lake. In spite of the current and future repairs to the levee and the increased safety at higher lake stages will the new regulation schedule remain in place or will there be a tendency to revert back to higher lake stages? The subsequent statement concerning water supply might lead one to believe maintaining higher lake stages are a definite consideration once repairs have been completed. "Water Supply, This project and future work on additional Reaches of the dike are delineated to separate drainage regions. The cumulative impacts of further improvements stand to be positive rather than negative, increasing the stability and safety of the HHD system, and enhancing water resource capabilities to meet all existing needs."
7. 4.5 Page 37... Recreational Resources, On page 33 it states that the contractor will be required to replace trail elements disturbed during the levee repairs. However, on page 37 it states, "the Corps does not have authority for this project to make repairs to such areas as LOST that would be removed or impacted with construction." It also states on page 39, "(4) Continued recreation planning will be performed during detailed project engineering and design. In addition, the appropriate FDEP representative will be contacted to insure collaboration on design features with the Scenic Trail Master Plan Coordination and the Lake Okeechobee Scenic Trail. An inventory of park amenities and utilities prior to construction would facilitate a rapid return to pre-construction state for those areas so impacted. During construction, access to certain parts of the Lake Okeechobee Scenic Trail (LOST) would be restricted, and parts of the trail would be removed. Following construction, access to the trail by the public would be restored. However, the Corps is not authorized to restore the paved surface of the scenic trail following construction. Coordination with FDEP would be conducted prior to and during construction." The portion of the paved trail from Pahokee to Belle Glade has had recreational benefits in

terms of increased numbers of trail users. The State of Florida has spent millions of dollars getting this portion of the trail paved, so it's hard to believe the USACOE will not put it back as they found it. This document is somewhat contradicting as noted from the comments on page 33. Tourism to local communities could be impacted by not restoring the levee to as-built conditions.

8. 4.12.11 Page 45... Federal Water Project Recreation Act, "The effects of the proposed action on outdoor recreation have been considered and are presented in the Supplemental and Final EIS. Short-term impacts to the Lake Okeechobee Scenic Trail located on top of the dike will require close coordination with FDOT and FDEP in order to return the trail to as-built conditions and limit trail closure time. Continued recreation planning will be performed during detailed project engineering and design. The project is in full compliance." Does this mean it will be the responsibility of FDOT and FDEP to fund the return of the trail to as-built conditions, or will the USACOE do it?
9. The EA indicates that Option 5 is now the preferred option, which moves the toe of slope out 150 ft. followed by relocation of the seepage ditch. However, the EA does not identify where the USACOE is planning to get the fill for the widened embankment and for filling the existing seepage ditch. This appears to be more of a concern than the actual widening.
10. Section 4.5 of the EA states that there will be No Significant Impact on topography or soils. This may be true for where the dike is widened, since the area is all ready impacted; however, the EA does not identify where the additional fill is coming from. Reach 1 is 22.4 miles long and will require quite a bit of fill coming from somewhere. Appendix A indicates that the USACOE anticipates getting the fill material from a commercial quarry; however, no specific source has been identified. Also, it does not appear that the lengths for Reaches 2 and 3 were identified in the EA.

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Memorandum

TO: Florida State Clearinghouse

FROM: Larry Hymowitz, AICP
District Four, Office of Modal Development

DATE: January 4, 2007

SUBJECT: ACOE – DEA for the Herbert Hoover Dike Major Rehabilitation, Modified Design in Reach 1 and Priority Toe Ditch Repairs in Reaches 1, 2, and 3 – Glades, Hendry, and Palm Beach Counties
SAI # FL200612122959C

The Florida Department of Transportation has reviewed the referenced document and offers the following comments:

1. While the overall map for the priority areas (Figure 2-9) does label the adjoining highway system, the individual maps (Figures 2-10 through 2-18) do not which causes some concern. Please provide this necessary level of detail on the individual priority site maps for both the adjoining roadways and railroad facilities that may be impacted by the proposed work.
2. There was no mention in the EA document of potential impact to the adjoining rail and roadway infrastructure from the proposed work. This potential impact to public infrastructure needs to be addressed in this NEPA document as well as any type of proposed mitigation.
3. In specific to priority area #3, the US 27 roadway is immediately adjacent to the site, and the associated roadway drainage ditch will in fact be impacted by the proposed work. FDOT is working with ACOE to ensure this impact will not be a negative one, but this impact needs to be documented in the report as well as the steps taken to mitigate all concerns.
4. As mentioned in the discussions between FDOT and ACOE, some type of permit or authorization will be needed for the work in the US 27 roadway right-of-way associated with priority site #3. We need to make sure there is an approved Traffic Control Plan for the work that takes into account the high speed of this adjacent roadway while providing sufficient protection for the traveling public and Dike Construction workers and associated equipment.
5. As an overall concern, FDOT provided funding for the construction and paving of portions of the Lake Okeechobee Scenic Trail (LOST) located on top of the Herbert Hoover Dike. As part of the dike rehabilitation, any associated impacts to the LOST should be fully mitigated by any necessary reconstruction to restore the trail to its current

Memorandum
January 4, 2007
Page 2 of 2

pre-rehabilitation condition. Impacts to the LOST trail surface, pedestrian bridges, berms, signage, mile markers or other features installed by the State of Florida must be replaced to like or higher standards by the ACOE. Temporary trail closure during the rehabilitation should be accompanied with appropriate signing and public notices. Again, these potential impacts and mitigation needs to be documented in the NEPA document.

If additional information is required on these comments, please feel free to contact Ms. Amie K. Goddeau, P.E., at (954) 777-4343 or amie.goddeau@dot.state.fl.us.

City of Pahokee

City Hall • 171 North Lake Avenue • Pahokee, Florida 33476 • Phone (561) 924-5534 • FAX (561) 924-7301



Office of the City Manager

January 2, 2007

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JAN 08 2007

TREASURE COAST
REGIONAL PLANNING COUNCIL

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Gary McEntire
Vice-Mayor

Allie H. Biggs
Commissioner

Henry Crawford, Jr.
Commissioner

Keith W. Babb, Jr.
Commissioner

Lillie Latimore
City Manager

Patricia McLean
City Clerk

Walton, Lantaff, et al.
City Attorney

James E. Blackford, Jr.
Chief of Police

Gary C. Burroughs
Fire Chief

Jeanie Perkins
Finance Director

Herbert Crawford
Director of Recreation

James Vaughn
Public Works Director

Alberta Fields
Human Resources

Mr. Greg Vaday
ICR Coordinator
Treasure Coast Regional Planning Council
301 East Ocean Boulevard
Suite 300
Stuart, Florida 34994

Dear Mr. Vaday:

I am in receipt of two Treasure Coast Regional Planning Council Memorandums regarding the Herbert Hoover Dike.

1. Herbert Hoover Dike – Major Rehabilitation
TCRPC Reference #06-PB-12-01
SAI# FL200612122959C
2. Draft Supplemental Environmental Statement Herbert Hoover Dike
TCRPC Reference #06-PB-12-03
SAI#FL200612182971C

You should be aware that Congressman Hastings has held a town hall meeting in the City of Pahokee along with the Corps of Engineers. The citizens of the City of Pahokee expressed their displeasure with the pursuit of the process chosen by the Corps of Engineers vs. the alternative which would not cause them to lose their homes, particularly since the choice by the Corps was based on less cost.

Since this time, the City of Pahokee has begun to look closely at the projected effect on the natural, social and economic environment in the community. While the final plans are not ready, we are able to determine from the presentation by the Corps of Engineers that it will be severe. For this reason, we are not prepared to present particulars at this time. We do know that the proposed action will strip the City's ad valorem tax base, leaving behind severe destruction and economic set back from the City's attempt to revitalize.

We are encouraging the Corps of Engineers to revisit their planning and choose an alternative that will not displace citizens and erode the City's tax base which is currently at 46%. I am interested in the impact and feedback from other cities and interested parties around the Lake.

Sincerely,

J.P. Sasser
Mayor

Cc's on the following pages

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JAN 10 2007

OIP / OLGA

Mr. Greg Vaday
Regional Planning Council
Page 2 of 3

Cc: The Honorable Members of
The City Commission

The Honorable Charlie Crist
Governor

The Honorable Alcee Hastings
United States Congressman

The Honorable Jessie Santamaria
Commissioner, Palm Beach County

The Honorable Addie Greene, Chair
Palm Beach County Commission

The Honorable J. Koone, Vice Chair
Palm Beach County Commission

The Honorable K. Marcus, Commissioner
Palm Beach County

The Honorable W. Newall, Commissioner
Palm Beach County

The Honorable M. McCarty, Commissioner
Palm Beach County

The Honorable B. Aronson, Commissioner
Palm Beach County

The Honorable B. Aronson, Commissioner
Palm Beach County

The Honorable Ellyn Bogdanoff
Florida State Representative – District 91

The Honorable Mary Brandenburg
Florida State Representative – District 89

The Honorable Susan Bucher
Florida State Representative – District 88

The Honorable Larcenia Bullard
Florida State Senator – District 39

The Honorable Ted Deutch
Florida State Senator – District 30

The Honorable Carl Domino
Florida State Representative – District 520

The Honorable Adam Hasner
Florida State Representative – District 87

The Honorable Ron Klein
Florida State Representative – District 22

The Honorable Richard Machek
Florida State Representative – District 78

The Honorable Tim Mahoney
U.S. Representative – District 16

The Honorable Ken Pruitt
Florida State Senator – District 28

The Honorable William Snyder
Florida State Representative – District 82

The Honorable Maria Sachs
Florida State Representative – District 86

The Honorable Kelly Skidmore
Florida State Representative – District 90

The Honorable Priscilla Taylor
Florida State Representative – District 84

The Honorable Shelley Vana
Florida State Representative – District 85

The Honorable Robert Wexler
U.S. Representative – District 19

All Residents directly affected by
Actions taken regarding
The Herbert Hoover Dike

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FLORIDA DEPARTMENT OF STATE

Sue M. Cobb

Secretary of State

DIVISION OF HISTORICAL RESOURCES

RECEIVED

DEC 20 2006

OIP / OLGA

Ms. Lauren Milligan
Director, Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, Mail Station 47
Tallahassee, Florida 32399-3000

December 15, 2006

RE: DHR No. 2005-10955/ Date Received: August 24, 2004
SAI No. FL200612122959C/ Jacksonville District Corps of Engineers
*Herbert Hoover Dike Major Rehabilitation, Draft Environmental Assessment and
Proposed Finding of No Significant Impact, Modified Design in Reach 1, and Priority
Toe Ditch Repairs in Reaches 1, 2 and 3/ Glades, Hendry and Palm Beach Counties*

Dear Ms. Milligan:

Our office received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act*, as amended, 36 C.F.R., Part 800: *Protection of Historic Properties*, and the *National Environmental Policy Act* of 1969, as amended. The State Historic Preservation Officer is to advise and assist federal agencies when identifying historic properties (archaeological, architectural, and historical resources) listed, or eligible for listing, in the *National Register of Historic Places*, assessing the project's effects, and considering alternatives to avoid or minimize adverse effects.

Based on a review of the information provided, it is the opinion of this office that this project could have an effect on the original design of the Herbert Hoover Dike (8PB2028), considered historically significant for its engineering design. However, this office concurs that the proposed necessary modifications will have no adverse effect on the characteristics qualifying this property for listing in the NRHP.

If you have any questions concerning our comments, please contact Janice Maddox, Historic Sites Specialist, at jmaddox@dos.state.fl.us or (850) 245-6333. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Frederick P. Gaske, Director, and
State Historic Preservation Officer

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
(850) 245-6300 • FAX: 245-6436

☐ Archaeological Research
(850) 245-6444 • FAX: 245-6452

☑ Historic Preservation
(850) 245-6333 • FAX: 245-6437

☐ Historical Museums
(850) 245-6400 • FAX: 245-6433

☐ Southeast Regional Office
(954) 467-4990 • FAX: 467-4991

☐ Northeast Regional Office
(904) 825-5045 • FAX: 825-5044

☐ Central Florida Regional Office
(813) 272-3843 • FAX: 272-2340

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960



RECEIVED

418
1/24/07

January 8, 2007

Mr. Stuart J. Appelbaum
Chief, Planning Division
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

ATTN: Ms. Nancy Allen

SUBJ: EPA Comments on the COE's Draft EA (DEA) for "Herbert Hoover Dike [HHD] major Rehabilitation for the Modified Design in Reach 1 and Priority Toe Ditch Repairs in Reaches 1, 2 and 3"; Glades, Hendry and Palm Beach Counties, FL

Dear Mr. Appelbaum:

Consistent with our responsibilities under Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the subject U.S. Army Corps of Engineers' (COE) DEA concerning HHD rehabilitation for Reaches 1, 2 and 3. Overall, EPA supports the proposed project to rehabilitate portions of the HHD to maintain its integrity. Our enclosed *Detailed Comments* should be considered in the development of the final EA (FEA), and primarily concern the wetland evaluations in the DEA.

This EA only addresses the environmental effects of a landside seepage berm and cutoff wall near the toe of the dike (COE's Preferred Alternative 5: pg. 13). Specifically, the proposed action would modify the design of Reach 1 and implement priority dike toe ditch repairs in Reaches 1, 2 and 3. Additional proposed HHD projects that are less readily implemented, somewhat less urgent, and/or perhaps have greater impacts would be subsequently addressed in a pending, separate environmental impact statement (EIS). Presumably, this EIS is the draft EIS (DEIS) already received for review by EPA entitled *Herbert Hoover Dike Reaches 2 and 3* and dated December 2006. Consistent with the National Environmental Policy Act (NEPA), this pending EIS and, to a lesser extent the subsequent FEA for the present project, should address the environmental impacts of all proposed and reasonably foreseeable HHD projects in their cumulative impacts section to provide the public with an overall environmental effect of HHD rehabilitation. Although we support the positive effects of HHD repairs, the cumulative impacts of these various HHD projects should be collectively disclosed in the cumulative impacts section of each NEPA document. We note that the DEA (pg. 35) currently only addresses the cumulative impacts of other projects within the area; however, the FEA should also cumulatively address the various proposed and reasonably foreseeable HHD rehabilitation projects as discussed above.

DETAILED COMMENTS

1. Pages 5 & 9, **Groundwater** – The DEA states that this alternative is similar to one that was not chosen originally due to the potential to negatively impact the groundwater supply. Full information should be provided on whether the proposed project also will affect groundwater including modeling data to show any potential effects.
2. Page 27, **Wetlands/Mitigation** – The DEA states that “[a]pplying the results of the WRAP [Wetland Rapid Assessment Procedure] analysis, the wetlands tree planting produced 1 credit habitat units of mitigation credit would be necessary for the priority toe ditch repairs in Reaches 1-3.” This statement is somewhat unclear from both an editorial and technical perspective. Based on the information provided in the DEA, WRAP was never applied to the plantings. Additionally, the “Functional Gain” produced by the Uniform Mitigation Assessment Method (UMAM) should not be referred to as a “credit habitat unit.” Please clarify this section in the FEA, and update as necessary once the comments below have been addressed.
3. Pages 32, 36 & 38, **Wetlands** – The DEA indicates the COE has approximately 27 mitigation bank credits from planting of wetland trees (8 acres) and removal of exotics (56 acres of *Melaleuca*). EPA requests that a joint federal agency review be conducted of the mitigation areas to determine if the work completed is appropriate to offset Reach 1 impacts. The document also states that there will be a surplus 23.52 mitigation credits available after the work is completed in Reach 1. Restoration activities conducted by the COE should be reviewed under the Joint State/Federal Mitigation Review Team Process for Florida. This is to insure the restoration activities completed meet the fundamental requirements of mitigation banks in the State of Florida and determine the total amount of mitigation credits generated by the tree planting and exotic removal.
4. Page 40, **Mitigation** – The DEA indicates that the proposed impact sites were evaluated using the WRAP functional assessment, and that the mitigation areas were assessed using the UMAM. Table 4-2 illustrated that the mitigation created 27.32 UMAM credits and the proposed impact sites created a debit of 3.8 WRAP acres, therefore providing a surplus of 23.52 UMAM mitigation credits. In order to determine the amount of mitigation necessary to offset project impacts, the functional assessment conducted needs to be either UMAM or WRAP for both the impact and mitigation sites. The two methods are not interchangeable and do not measure the same wetland functions. Therefore, the document needs to include a WRAP analysis for the mitigation areas, or a UMAM analysis for the impact sites.

Page 40 of the DEA states that “[b]iologists from the Corps [COE] and USFWS prepared a Wetlands Rapid Assessment Procedure (WRAP) field analysis of the existing wetlands function in Reach 1 to estimate the required acres of mitigation needed to compensate for filling the toe ditch.” The total mitigation required through

EPA appreciates the opportunity to provide these early comments on the DEA. Should you have questions, feel free to contact Chris Hoberg of my staff at 404/562-9619 (or hoberg.chris@epa.gov) for NEPA issues or Ron Miedema at 561/616-8741 (or miedema.ron@epa.gov) or Victoria Foster at 561/616-8878 (or foster.victoria@epa.gov) of the Water Management Division at the EPA South Florida Office for wetland issues.

Sincerely,

A handwritten signature in black ink, appearing to read "Heinz Mueller", with a stylized, flowing script.

Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

Enclosure: *Detailed Comments*

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County Administration
Office of Community Revitalization

2300 North Jog Rd.
West Palm Beach, FL 33411
(561) 233-5311
FAX: (561) 233-5365
www.pbcgov.com/ocr

**Palm Beach County
Board of County
Commissioners**

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Jeff Koons, Vice Chair
Karen Marcus
Warren H. Newell
Mary McCarty
Burt Aaronson
Jess R. Santamaria

County Administrator

Robert Weisman

<http://www.pbcgov.com>

*"An Equal Opportunity
Affirmative Action Employer"*

January 4, 2007

U.S. Army Corps of Engineers
Attn: Nancy Allen, Planning Division
701 San Marco Blvd.
Jacksonville, FL 32207-8175

Dear Ms. Allen,

On behalf of the Palm Beach County Office of Community Revitalization and the Board of County Commissioners, you are cordially invited and encouraged to attend the Canal Point Visioning Workshop.

The Workshop will be held on **Saturday January 27th, 2007 from 9:00 a.m. to 3:00 p.m.** The location will be the **Kathryn E. Cunningham/Canal Point Elementary School**. A follow-up review meeting to present findings will be held at a later date.

Hopefully, you and/or a member of your organization can take the time to attend this important event. Not only will any input you provide be valuable, but your attendance will also demonstrate to the residents, your commitment to helping them create their vision. Your input is vital to the successful revitalization of the community.

The Army Corps involvement with the Lake Okeechobee/Herbert Hoover Dyke expansion has been a major topic of discussion among Western County residents. Hopefully, you or a member of the Army Corps organization will be able to attend this important workshop. Not only will any input you provide be valuable but your attendance will also demonstrate to the residents, your commitment to helping them create their vision. Your input is vital to the successful revitalization of the community.

District Commissioner Jess R. Santamaria representing Canal Point fully supports this effort and the Countywide Community Revitalization Team's (CCRT) initiatives for this area.

We are looking forward to hearing your concerns, ideas, and recommendations on how to make Canal Point an even better place in which to live, work and play.

Sincerely,

A handwritten signature in black ink, appearing to read "Audley G. Reid".

Audley G. Reid, Senior Planner
Palm Beach County Office of Community Revitalization

Cc: Ruth Moguillansky-DeRose, Principal Planner
Verdenia C. Baker, Deputy County Administrator

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Department of Environmental
Resources Management
2300 N. Jog Road, 4th Floor
West Palm Beach, FL 33411-2743
(561) 233-2400
FAX: (561) 233-2414
www.pbcgov.com

November 30, 2006

Mr. Richard E. Bonner, P. E.
U. S. Army Corps of Engineers, Jacksonville District
701 San Marco Boulevard
Jacksonville, FL 32207-8175

SUBJECT: ACCESS TO THE LAKE OKEECHOBEE SCENIC TRAIL IN THE PORT MYACCA
TO BELLE GLADE REACH OF HERBERT HOVER DIKE

Dear Mr. Bonner:

This letter is a request to the U. S. Army Corps of Engineers to leave in place and allow for public use of the dirt ramp that currently provides access to the Herbert Hoover Dike from the Five Smooth Stones, Inc. property lying approximately 1/2 mile south of the Palm Beach and Martin County boundary line and approximately 7 1/2 miles north of Pahokee in Section 35, Tier 40S, Range 37.

Palm Beach County owns property immediately to the south of the above mentioned tract of land. The County property was purchased expressly to provide a trailhead joining the Lake Okeechobee Scenic Trail (L.O.S.T.) to a proposed Ocean-to-Lake Trail. The Ocean-to-Lake Trail is a cornerstone of the County's new Northeast Everglades Natural Area (NENA) program. I have enclosed a NENA brochure which briefly outlines this program. The Ocean-to-Lake Trail will link several large conservation areas in Palm Beach and Martin Counties lying between Lake Okeechobee and the Atlantic Ocean. The economic enhancement that development of this recreational trail could bring the Glades communities, particularly at this time, would be most welcome.

Mr. David McGahee, President of Five Smooth Stones, is as eager to see this trail successfully implemented as we are. We are currently working on an agreement with him to secure the westernmost link of the O.L.T. through Five Smooth Stone, Inc. property. Because the current uncertainty as to when and exactly how this segment of the Herbert Hoover Dike will be rehabilitated, we think that the most efficient and sensible course of action is to make use of the existing ramp for access to this stretch of the L.O.S.T.

Your consideration of this request is appreciated. If you have any questions, do not hesitate to contact me or Sally Channon, NENA Implementation Coordinator for the Department of Environmental Resources Management. Her direct phone number is 561 233 2429.

Sincerely,

Richard E. Walesky, Director

Enclosure

CC: Pam Nolan, Economic Development Office
Art Rubenson, ACOE

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SOUTH FLORIDA CONSERVANCY DISTRICT

**2832 NORTH MAIN STREET
P. O. Box 896
Belle Glade, Florida 33430**

Supervisors
FRITZ STEIN, JR.
KENNETH McDUFFIE

PHONE: (561) 996-2940
FAX: (561) 996-2960

General Manager
DWIGHT R. GRAYDON

January 8, 2007

Ms. Nancy Allen
U.S. Army Corps of Engineers
P. O. Box 4970
Jacksonville, FL 32232-0019

RE: Herbert Hoover Dike Major Rehabilitation
Glades, Hendry and Palm Beach Counties

Dear Ms. Allen:

Enclosed is our District engineer's comments reference the Modified Design in Reach 1 and Priority Toe Ditch Repairs in Reaches 1, 2, and 3, of the Herbert Hoover Dike Major Rehabilitation.

Thanks for the opportunity to review and comment.

Very truly yours,

SOUTH FLORIDA CONSERVANCY DISTRICT
EAST BEACH WATER CONTROL DISTRICT
PELICAN LAKE WATER CONTROL DISTRICT
EAST SHORE WATER CONTROL DISTRICT
SOUTH SHORE DRAINAGE DISTRICT



Dwight R. Graydon
General Manager

DRG:ss

Enclosure

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January 5, 2007

Dwight R. Graydon, General Manager
South Florida Conservancy District,
East Beach Water Control District,
Pelican Lake Water Control District,
East Shore Water Control District and
South Shore Drainage District
P. O. Box 896
Belle Glade, FL 33430

RECEIVED JAN 06 2007

Subject: Review of Corps of Engineers Document dated December, 2006
entitled "Herbert Hoover Dike Major Rehabilitation, Glades,
Hendry and Palm Beach Counties, Environmental Assessment
and Proposed Findings of No Significant Impact"

Dear Mr. Graydon:

At your request, we have reviewed the above subject document and its potential impact on the water control facilities and operation of the various water control districts under your management fronting on Lake Okeechobee in the area affected by this proposed project. The area considered in this report extends from Port Mayaca on the north around the east side of Lake Okeechobee to S-2 at the Hillsboro Canal. Priority area repairs are proposed at numerous locations within Reaches 1, 2 and 3 of the proposed Lake Okeechobee Herbert Hoover Dike repairs.

The extent of our investigation was to determine the impact to their facilities and operations of the proposed preferred alternative as well as the temporary toe ditch repairs in the various drainage districts. The preferred alternative is the construction of a cut off wall near the top of the dike located along the dike's center line to below the limestone layer as it exists at each specific location along the dike. The width of the cut off wall will be 2 feet and it will be composed of material decided upon during the preparation of plans and specifications.

The following is a description of impacts and comments for the various drainage districts affected by the proposed improvements in Reach 1:

1. Pelican Lake Water Control District (PLWCD)

PLWCD Pumping Unit No. 1 lies north of the West Palm Beach Canal and extends approximately 2.7 miles from the West Palm Beach Canal to its northern terminus. PLWCD Pumping Unit No. 2 lies south of the West Palm Beach Canal and extends approximately 1.75 miles to the

2090 Palm Beach Lakes Blvd.
Suite 600
West Palm Beach, FL 33409
(561) 684-3375
Fax: (561) 689-8531
www.lbfh.com

south. Throughout PLWCD the proposed improvements to the Dike will physically affect only the area west of the Florida East Coast Railroad and will not impact any canals or internal water control facilities of PLWCD. PLWCD Pumping Unit No. 1 does have a connection to Lake Okeechobee at Station 1695+00 which is used to provide irrigation water to the higher lands on the north end of the District. This connection and its function should not be altered during the design and construction of the dike improvements.

2. East Beach Water Control District (EBWCD)

EBWCD contains about 4.6 miles of frontage along Lake Okeechobee and consists principally of lands within the City of Pahokee. The proposed improvement to the Herbert Hoover Dike with its proposed 150' wide seepage berm and collector ditch will have a significant impact on most of the residential lots along the existing alignment of the Herbert Hoover Dike. These are principally residential units and the design will require the acquisition of lots in order to construct the proposed facilities. Alternatives to the proposed facility should be considered in light of the extremely high cost of acquiring land and improvements through the City of Pahokee.

At the south end of the EBWCD, Pumping Station No. 1 discharges through Culvert No. 10 into Lake Okeechobee. The design of the Herbert Hoover Dike improvements calls for a cut off wall which will have to be tied in to the existing or modified Culvert No. 10 in order to allow the passage of pump discharge water into Lake Okeechobee when the station is operated in a drainage mode or the passage of irrigation water from the Lake into the District during irrigation mode. Details of that installation should be coordinated by the Corps design personnel with the EBWCD.

3. East Shore Water Control District (ESWCD)

ESWCD will be unaffected by the improvements to the toe ditch and the seepage berm, however, ESWCD No. 1 pump station does discharge to Lake Okeechobee and will also require the design of the cut off wall adjacent to the pump station that will allow the continued operation of the pump in both the drainage and irrigation mode. The pump station is located near Station 235+500.

4. South Florida Conservancy District (SFCD) Unit No. 6

SFCD Unit No. 6 extends from Station 236+000 to 254+000 a total distance of 2.8 miles. The northern part of this unit is adjacent to some abandoned rock pits which extends to the COE right-of-way. Design of

Dwight R. Graydon, General Manager
January 5, 2007
Page 3

the seepage containment berm and cut off wall will have to be specifically designed for this area because of the impact to that excavation and the subsurface conditions. In the remainder of the Unit No. 6 area, the proposed project will affect the adjacent lands but no specific structures or facilities of SFCD will be affected.

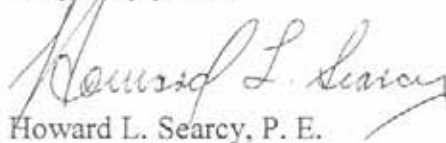
5. South Florida Conservancy District (SFCD) Pumping Unit No. 5

The entire length of SFCD Pumping Unit No. 5 is adjacent to U. S. 27 and the existing seepage ditches between the Herbert Hoover Dike and U.S. 27. The consideration of seepage control in this area will involve the relocation of the seepage ditch or additional toe cut off wall adjacent to U.S. Highway 27 in order to provide stability in this area.

As a general comment, the preferred alternative does include the acquisition of significant parcels of land and improvements throughout this entire length. It would seem that the consideration of a structural cut off wall at the existing right-of-way line might be a more economical alternative than the acquisition of land and structures in the 150' area of proposed seepage berm construction.

If I can answer any further questions on this matter, please let me know.

Very truly yours,


Howard L. Searcy, P. E.

HLS/dw

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Office of the County Manager
111 NW 1st Street • Suite 2910
Miami, Florida 33128-1994
T 305-375-5311 F 305-375-1262

miamidade.gov

December 27, 2006

Nancy Allen
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: Herbert Hoover Dike Major Rehabilitation for the Modified Design in
Reach 1 and Priority Toe Ditch Repairs in Reaches 1, 2, and 3
Environmental Assessment Comments

Dear Ms. Allen:

Miami-Dade County supports the efforts of the U.S. Army Corps of Engineers to maintain the Herbert Hoover Dike, particularly to assure protection of the public and property in the vicinity of the reaches in need of repair in Hendry, Glades, and Palm Beach Counties. The preferred structural alternative including a barrier wall extending into the underlying substrate and a seepage berm at the toe appears to be an appropriate engineering solution for minimizing leaks.

Although the selection of a particular rehabilitation method has no direct impacts on Miami-Dade, we recognize the importance of a structurally sound dike system for maintaining Lake Okeechobee water storage capacity and optimizing Lake regulation schedules. Comprehensive rehabilitation of the dike is needed to avoid constraints on Lake water storage management. These in turn are important for meeting downstream water supply and natural system restoration objectives. Miami-Dade County remains committed to actively commenting and participating in other regional water management and environmental restoration projects.

Sincerely,

George M. Burgess
County Manager

Delivering Excellence Every Day

COUNTY

ADA Coordination
Agenda Coordination
Art in Public Places
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Building Code Compliance
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Business Development
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Environmental Resources Management
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General Services Administration
Historic Preservation
Homeless Trust
Housing Agency
Housing Finance Authority
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Planning and Zoning
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Procurement
Property Appraiser
Public Library System
Public Works
Safe Neighborhood Parks
Seaport
Solid Waste Management
Strategic Business Management
Team Metro
Transit
Urban Revitalization Task Force
Vizcaya Museum and Gardens
Water and Sewer

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Allen, Nancy P SAJ

From: Robbins, Erica A SAJ
Sent: Wednesday, January 03, 2007 5:09 PM
To: Regalado, Nanciann E SAJ; Smith, Pauline M SAJ
Cc: Allen, Shauna R SAJ; Allen, Nancy P SAJ; Riedle, Walter SAJ
Subject: FW: Public Meeting and Comment for Herbert Hoover Dike Rehabilitation for Reaches 2 and 3

Quick note from Paul Gray at Audubon re: support of HHD repairs.

Erica A. Robbins
Outreach Program Specialist, South Projects U.S. Army Corps of Engineers Corporate
Communications Office, Outreach Team 1400 Centrepark Boulevard, Suite 750 West Palm Beach
FL 33401-7402
P: 561-683-1577 x 32 C: 561-801-5734 F: 561-683-2418 erica.a.robbs@saj02.usace.army.mil

-----Original Message-----

From: Gray, Paul N. [mailto:Audubon@Okeechobee.com]
Sent: Wednesday, January 03, 2007 5:04 PM
To: Robbins, Erica A SAJ
Subject: Re: Public Meeting and Comment for Herbert Hoover Dike Rehabilitation for Reaches 2 and 3

Thanks Erica,

whew, I can't keep up! I'll try to make the Clewiston hearing.

My workplan actually calls for us to support dike repair efforts.

Paul

----- Original Message -----

From: Robbins, Erica A SAJ <mailto:Erica.A.Robbins@saj02.usace.army.mil>
To: Audubon@Okeechobee.com
Sent: Wednesday, January 03, 2007 4:13 PM
Subject: RE: Public Meeting and Comment for Herbert Hoover Dike Rehabilitation for Reaches 2 and 3

Hi Paul, Happy New Year!

There are two different documents currently out for comment. The first is the EA for Herbert Hoover Dike, which ends 12 Jan. The second is the Herbert Hoover Dike SEIS (Reaches 2 and 3), ending 5 Feb, with a public meeting on Jan 10. Let me know if you have any additional questions, and enjoy your afternoon- Erica

Documents Open for Public Review & Comment:

Herbert Hoover Dike Draft Supplement EIS

(USACE Jax web site)

The 30-day comment period ends 5 Feb 2007.

Submit comments to:

U.S. Army Corps of Engineers

Attn: Nancy Allen, Planning Division

701 San Marco Blvd.
Jacksonville FL 32207-8175
904-232-3206
HHDSEISComments@usace.army.mil

Herbert Hoover Dike Draft Environmental Assessment (EA) (USACE Jax web site)
The 30-day comment period ends 12 Jan 2007.

Submit comments to:
U.S. Army Corps of Engineers
Attn: Nancy Allen, Planning Division
701 San Marco Blvd.
Jacksonville FL 32207-8175
904-232-3206
HDDEAComments@usace.army.mil

The link to both:
<http://www.saj.usace.army.mil/cco/HHD/hhdike.htm>

Public Meeting
Wednesday, January 10, 2007
John Boy Auditorium
1200 WC Owen Avenue
Clewiston, FL 33440

Doors will open at 6:30 p.m. and the presentation will begin at 7:00 p.m., followed by a period for public comment. The Corps will present information on the proposed dike rehabilitation and the draft SEIS. All interested individuals, groups and agencies are encouraged to attend and will be given the opportunity to provide formal public comment on the draft Supplemental Environmental Impact Statement (SEIS).

Spanish translation and assistance for individuals with special needs is available upon request by calling 561-472-8890, at least 2 days prior to the event.

Erica A. Robbins

Outreach Program Specialist, South Projects

U.S. Army Corps of Engineers

Corporate Communications Office, Outreach Team

1400 Centrepark Boulevard, Suite 750

West Palm Beach FL 33401-7402

P: 561-683-1577 x 32 C: 561-801-5734 F: 561-683-2418

erica.a.robbsins@saj02.usace.army.mil

-----Original Message-----

From: Gray, Paul N. [mailto:Audubon@Okeechobee.com]

Sent: Wednesday, January 03, 2007 3:51 PM

To: Robbins, Erica A SAJ

Subject: Re: Public Meeting and Comment for Herbert Hoover Dike Rehabilitation for Reaches 2 and 3

Hi Erica,

I received an announcement from you on Dec. 12 that said the comment period ended on January 12. Is this a new date, or was that for a different document?

thanks

Paul

Paul N. Gray, Ph.D., Science Coordinator

Lake Okeechobee Watershed Program

Audubon of Florida

PO Box 707

Lorida, FL 33857

863-655-1831 phone and FAX

Audubon@Okeechobee.com

www.audubonofflorida.org

----- Original Message -----

From: Robbins, Erica A SAJ <mailto:Erica.A.Robbins@saj03.usace.army.mil>

To: audubon@okeechobee.com ; okeenews@okeechobee.com

Sent: Friday, December 22, 2006 3:43 PM

Subject: Public Meeting and Comment for Herbert Hoover Dike Rehabilitation for Reaches 2 and 3

The U.S. Army Corps of Engineers, Jacksonville District, has released the Herbert Hoover Dike Reaches 2 and 3 Draft Engineering Analysis and Draft Supplement to the 1999 Environmental Impact Statement for review and public comment.

The purpose of the document is to assess the environmental impacts for the toe ditch fill and the new design for the rehabilitation of Reaches 2 and 3. Herbert Hoover Dike is divided into eight segments or "Reaches" for planning purposes. Reach 2 extends from the Caloosahatchee River at Moore Haven to the Miami Canal at Lake Harbor. Reach 3 extends from the Miami Canal to the Hillsboro Canal in Belle Glade.

To review and download the document, go to:
<http://www.saj.usace.army.mil/cco/HHD/hhdike.htm>

The 45-day comment period for the Draft SEIS closes Feb. 5, 2007.

Send comments to:

U.S. Army Corps of Engineers

Attn: Nancy Allen, Planning Division

701 San Marco Blvd.

Jacksonville, FL 32207-8175

904-232-3206

Submit comments by e-mail to:

HHDSEISComments@usace.army.mil

Public Meeting

Wednesday, January 10, 2007

John Boy Auditorium

1200 WC Owen Avenue

Clewiston, FL 33440

Doors will open at 6:30 p.m. and the presentation will begin at 7:00 p.m., followed by a period for public comment. The Corps will present information on the proposed dike rehabilitation and the draft SEIS. All interested individuals, groups and agencies are encouraged to attend and will be given the opportunity to provide formal public comment on the draft Supplemental Environmental Impact Statement (SEIS).

Spanish translation and assistance for individuals with special needs is available upon request by calling 561-472-8890, at least 2 days prior to the event.

Thank you for your interest in this project and for your comments!



United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960



November 24, 2006

Stuart J. Appelbaum
Chief, Planning Division
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Dear Mr. Appelbaum:

The Fish and Wildlife Service (Service) has reviewed the additional information submitted by the U.S. Army Corps of Engineers (Corps), dated October 4, 2006, regarding a technical review report on Herbert Hoover Dike (HHD) Major Rehabilitation Project that included recommendations for urgent repairs to Reach 1A. The Corps has suspended construction of the previously selected plan (bench and cutoff wall) and wants to begin the toe ditch repairs quickly, in anticipation of the 2007 rainy season. A review group of Corps' engineers recommended depositing and compacting sand and gravel in the levee toe ditch and building up a berm over the ditch. The purpose of the work is to stabilize the outer toe of HHD and prevent further deterioration. This letter represents the Service's view of the effects of the proposed action in accordance with section 7 of the Endangered Species Act of 1973, as amended (87 Stat. 884; 16 U.S.C. 1531 *et seq.*) and the provisions of the Fish and Wildlife Coordination Act of 1958, as amended (FWCA) (48 Stat. 401; 16 U.S.C. 661 *et seq.*).

FISH AND WILDLIFE COORDINATION ACT

The proposed modifications are very similar to a component of the alternatives originally considered for HHD repair in the 1999 Draft EIS, and previously addressed in our Final FWCA report dated December 20, 2001, and in our previous supplemental FWCA reports, dated March 4, 2003, and March 8, 2004. Since the Corps had documented the proposed fill in the 1999 draft EIS, and subsequently carried out the mitigation actions for wetlands losses, and the revised design appears to avoid further impacts to wetlands, no additional mitigation will be required. However, if modifications are made to the project design that potentially impact wetland habitat, further evaluation may be required under the FWCA.

THREATENED AND ENDANGERED SPECIES

The Service concurred on June 9, 1999, with the Corps' determination that the project was "not likely to adversely affect" the threatened bald eagle (*Haliaeetus leucocephalus*) or the threatened eastern indigo snake (*Drymarchon corais couperi*). We must remind you the Corps' proposed measures to avoid adverse effects to the bald eagle and the eastern indigo snake remain in effect.

Our field inspections indicated the consistent presence of a bald eagle along the HHD between Canal Point and Pahokee at about Mile 10, measuring south from Port Mayaca. This was noted in our draft FWCA reports, dated February 11, 2000, and March 8, 2004. The Corps must search



the area for bald eagle nests prior to construction to avoid construction activities that may disrupt nesting. In addition, prior to project construction, the contractor will instruct all personnel associated with the project that endangered species may be present in the area, and the need to avoid harming, harassing, or killing these species and the civil and criminal consequences. Construction activities must be kept under surveillance, management, and control to minimize any interference, disturbance, or impact to these resources.

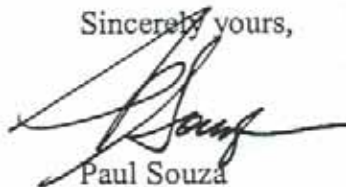
On October 5, 2006 an interagency team composed of Corps staff, an Engineer from the Florida Department of Environmental Protection, Corps contract staff, and a Service biologist conducted an inspection of Reaches 1, 3, and 2 with project engineer Jacob R. Davis. We discussed the subject modifications to the plan now included for urgent repairs to Reach A.

It appears the subject repairs will not further impact wildlife with the exception of temporary impacts associated with construction. We are delighted to see the effort the Corps' project engineer has made to minimize potential impacts on wildlife resources. In addition, we have noticed sensitivity analysis has been performed for Reach A to determine the nature and amount of backfill materials used in these repairs. We continue to encourage Corps' engineering staff to perform this analysis for each identified section to determine the total length of the portion of the toe ditch that needs to be backfilled. The Corps can further limit project cost and also environmental impacts as the project proceeds to detailed design.

Based on our review of the information provided regarding the recommendations for urgent repairs to Reach A and the Corps' continued acceptance of measures to avoid adverse effects to the bald eagle and the eastern indigo snake, we find there is no need to reinitiate consultation at this time. If modifications are made to the project, if additional information involving potential effects to listed species becomes available, if a new species is listed, or if designated critical habitat may be adversely affected by the project, reinitiation of consultation may be necessary.

We greatly appreciate your cooperation in this planning effort and thank you for your support in protecting significant fish and wildlife resources. If you have any questions regarding this project, please contact Agustin P. Valido at 772-562-3909, extension 298.

Sincerely yours,



Paul Souza

Field Supervisor

South Florida Ecological Services Office

cc:

Corps, Jacksonville, Florida (Nancy Allen)
Corps, Jacksonville, Florida (Jacob R. Davis)
FWC, West Palm Beach, Florida (Chuck Collins)
FDEP, West Palm Beach, Florida (Stan Ganthier)
Service, Jacksonville, Florida (Miles Meyer)

----- Original Message -----

From: "Cintron, Barbara B SAJ"
[Barbara.B.Cintron@saj02.usace.army.mil]
Sent: 09/27/2006 02:40 PM
To: Paul Souza
Cc: Allen, Nancy P SAJ" <Nancy.P.Allen@saj02.usace.army.mil>
Subject: Herbert Hoover Dike urgent repairs to Reach 1A

Paul: As Marie pre-briefed you two days ago, the Corps Jacksonville District has received a technical review report on Herbert Hoover Dike that included recommendations for urgent repair to Reach 1A. Recommendations were made by a selected review group of Corps engineers from all over the U.S. Repair actions consist of depositing sand and gravel in the levee toe ditch and building up a berm over the ditch. The Corps has suspended construction of the previously selected plan (bench and cutoff wall) and wants to begin the toe ditch repairs quickly, in anticipation of the 2007 rainy season. The purpose of the work is to stabilize the outer toe of HHD and prevent further deterioration.

The recommended action is very similar to a component of 2 of the 3 alternatives originally considered for HHD repair in the 1999 Draft EIS. The preferred plan described in that EIS (Alt 3) would have impacted wetlands in the toe ditch. A Fish and Wildlife Coordination Act Report was prepared for the 1999 EIS. In it Service biologists recommended off site mitigation for the wetlands fill by restoration of degraded wetlands (leveling and planting with wetland trees). The Corps concurred with the mitigation recommendations, bought the required trees, and carried out 8 acres of wetlands grading and planting. However, the toe ditch was never filled in through the reach: subsequent Corps value engineering studies led to a change in the recommended plan and eliminated the fill work in the toe ditch. The Final HHD EIS, coordinated in 2005, describes a different repair plan, involving construction of a bench in the levee and emplacement of a cut-off wall.

We have prepared a short PowerPoint presentation showing the area of required work, sketches of the fill plan and explanation of the area impacted as well as acreage of the previously built mitigation area. It is attached to this email.

There is no critical habitat for listed endangered species along the outer toe of Herbert Hoover Dike. Listed species that might be observed in the region include wood stork (E); snail kite (E; critical habitat inside HHD in Lake Okeechobee littoral zone), eastern indigo snake, bald eagle, and Audubon's crested caracara. The burrowing owl, a state listed species of special concern, may also be present. Memoranda from the field document that soils in the lower levee toe are frequently saturated with water and do not provide adequate burrowing habitat for burrowing owls or indigo snakes. There are records of one bald eagle nest site adjacent to reach 1, and last year an active

nest of Audubon's Crested Caracara was identified in a commercial nursery adjacent to the Reach 1A work area. This nest was subsequently abandoned by the caracara pair when the chicks failed to fledge.

The Corps is committed to working with the Service and FWC to assure that all standard protective measures for bald eagle, caracara and other significant fish and wildlife resources are implemented along with the proposed action. However, as discussed in the referenced EIS, fish and wildlife habitat in the toe ditch along the affected reach is not of high quality and will be eliminated by the proposed fill. We have already constructed mitigation for the estimated 6.2 acres of fill in the ditch along this reach.

Because we had documented this proposed fill in the 1999 draft EIS, and subsequently carried out the mitigation actions for wetlands losses, we believe that we will not cause any unanticipated adverse effects on the natural environment as a result of the current proposed action.

We'd appreciate your views on the proposed plan. The Powerpoint provides as much information as we have currently on the plan of action. We can also provide photos of the mitigation area. Please share it with your staff and let us know of your concerns. The Corps would like to complete coordination under NEPA by the close of the calendar year so that work can proceed.

Thank you.

Barbara B. Cinron

S. Florida Section Chief, Environmental Branch

Planning Div., Jacksonville District

US Army Corps of Engineers

904-232-1692

From: Hughes, Eric H SAJ
Sent: Wednesday, October 04, 2006 2:54 PM
To: harvey.richard@epa.gov; Heinz Mueller
(mueller.heinz@epamail.epa.gov)
Cc: Cintron, Barbara B SAJ
Subject: FW: Scheduling telcon on Herbert Hoover Dike repair changes
Importance: High

Richard/Heinz:

FYI the e-mail below and the attached Powerpoint file.

WOULD YOU BE AVAILABLE FOR A SHORT (15-30 min) CONFERENCE CALL TOMORROW (Thursday, Oct 5th) WITH BARBARA CINTRON with the JAX COE, to discuss??

HEINZ - Can you do this in the morning tomorrow, Richard says that would work for him. Pick a time.

Barbara - Richard's phone is 561-615-5292 and Heinz's phone is 404-562-9611. I'll be in Baltimore the next 2 days, so I can't participate.

Eric H

From: Cintron, Barbara B SAJ
Sent: Tuesday, October 03, 2006 5:17 PM
To: Hughes, Eric H SAJ
Cc: Burns, Marie G SAJ; Ross, Daphne M SAJ; Brooks-Hall, Kimberly SAJ; Allen, Nancy P SAJ; Shafer, Mark D SAJ; McAdams, James J SAJ
Subject: Scheduling telcon on Herbert Hoover Dike repair changes
Importance: High

Eric: This Friday the Corps will hold a news conference and release information about the reviews of HHD recently carried out by an independent review team with additional input from the WMD and contractors familiar with the Dike. The Corps has received a consensus of recommendations for repairs and, to make a long story as short as possible, it appears we will return to a plan very similar to the

preferred alternative plan first discussed in the HHD Reach 1 Draft EIS coordinated in 1999. We will need to stabilize the levee toe first by filling the toe ditch and depositing a berm over it.

As we discussed last week, we in Planning would like to go over the proposed repairs and the options for completing NEPA on the most urgent repairs as expeditiously as possible. Last week I told you I would work up a short discussion (as it turned out it's a short Power Point) indicating the area we want to repair most urgently and share with all EPA offices involved our proposed actions. As it happens the project manager and project engineer responded with some illustrations and explanations in Power Point, so we took it from there.

Because Col Grosskruger promised interested parties he would share his plans as soon as possible, and because he plans to announce them publicly on Friday (October 6), I'd like it if we could schedule our first telephone call tomorrow or Thursday of this week. Col. Grosskruger's announcement will be very general, but we want concerned agencies to know more details of what we plan to do prior to the news conference, so that if you receive questions at least you know what we plan to do.

Here is our current version of the powerpoint. It addresses the where, what, wetlands impacts and some up-front mitigation we had done in anticipation of building the 2000 plan, and schedule to begin this work in early 2007.

Do you think we can set this up? I know It's short notice, but I was out sick last Friday and found out about the news release only late yesterday.

Thanks for any help you can give us to coordinate this. We want EPA to be in the loop and welcome your suggestions.

Barb



**US Army Corps
of Engineers®**

Jacksonville District